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*"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.*

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THE RUSSO-JAPANESE WAR: JAPAN'S FINANCIAL  
PREPARATION.

BY CAPTAIN HARRY MADELINE.\*

*(Translated from the French by Capt. J. A. SHIPTON, Artillery Corps, U. S. A.)*



FTER Sedan the spirit of War, as far as great conflicts of one nation against another were concerned, had lain dormant for almost a quarter of a century, manifesting its vitality in only a single instance, that of 1877-78, in the struggle between Russia, Roumania and Turkey. After the conflict between China and Japan, wars seemed to become epidemic, breaking out successively between Turkey and Greece, the United States and Spain, the British and the Boers, and finally the Japanese and the Russians.

The Fashoda incident narrowly missed involving France and England, and the Balkans were so agitated that it was almost a miracle that they did not yield to the voice of Mars and Bellona.

This state of excitement yielding to a peaceful condition of affairs, did not fail to impress some thoughtful persons, who do not share the optimism which prevailed on the eve of the present war. They believed of this peace, that the first cannon shots would create a panic in the camp of the philanthropists and economists. They further believed, especially in France, where the wish was father to the thought, that the Russians must infallibly succeed, Considering the state of their finances

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\*It is the *nom de plume* of an officer of the Belgian Army, who contributes this paper to the JOURNAL.

it was affirmed that the resistance of the Japanese could not be of long duration. "Even though the war should continue for a few months only, the Japanese would be ruined, would be impoverished and find it impossible to continue the struggle.\*

It seems that, in estimating the resources of Japan, one may be very much mistaken if he relies upon figures collected in times of peace. To tell the truth, it should have long been apparent that the Japanese have never lost sight of the fact that a great war, such as that in which they are now engaged against the giant Muscovite, would require a strong military organization, large armaments and perfect *matériel*; and that they would need large sums of money to prepare for this war, and still more money to carry it on, once it was begun. The financial preparation for war, less apparent than the military preparation, properly so called, is of the very highest importance; during the operations it most generally happens that the relation between the successive phases escapes the observation of the public, the entire plan only becoming intelligible after it is all finished and has produced its effects. For Japan, before hostilities began, it was, I believe, Prof. Karl Rathgen, of Heidelberg, who first explained this financial preparation,† which I am going to try to set forth here in its different aspects and with its different consequences.

Before the war with China the financial history of modern Japan is divided into two periods. The first, which extended from the Revolution of 1868 to 1881, was marked by the organization of the administration, the transformation of the land tax into one in the nature of a money tax, and by the emission of an exaggerated amount of paper money; this was a period of transition. The second period was one entirely of consolidation; the fiduciary circulation was regulated, taxes were increased moderately and progressively, the railroad system extended, etc., etc.

During these two periods the organization and extension of the national forces was carried on unceasingly, and on a large scale. The law of October 28, 1872, constituted the permanent standing army and established obligatory service. By 1874 a force of five thousand men was available for service in Formosa; in 1877, during the revolt of Kion-Sion, fifty thousand men,

\**Revue Bleue*—20 Fevrier, 1904—"La Guerre fatale"—par B. de Zenzinoff—Paris.)

†*Die Woche*—16 Janvier, 1904—"Japans finanzielle Kriegsbereitschaft" von Professor Doktor Karl Rathgen, Berlin.



instructed in European methods of warfare, were available for the operations. The law of January 21, 1889, carrying out the idea of that of October 28, 1872, and those of April 7, 1875, and October 27, 1879, completed the introduction of the Prussian system throughout Japan. In 1895, during the war with China, the effective strength of troops mobilized and transported to the Asiatic continent reached a total of seventy-five thousand men. Meanwhile, taking into consideration the variations in the value of the yen,\* the expenses of the military establishment up to 1895 were not increased to any very great extent; in 1874, the War Budget carried about seven and one-half million yens; in 1894, it was not over seventeen million yens.

At the opening of the Japanese-Chinese campaign, Japan was ready both in a financial and a military sense, and easily supported the cost of the war. As far as the actual direct expenses of the war were concerned, the amount was two hundred and thirty-five million yens; this was covered by a loan of one hundred and twenty-five million; by a loan of eighty-two million, paid out of the indemnity received from China; and by the surplus, resulting from the ordinary resources of the state.

To the direct cost of the war, must be added the cost of the occupation of Formosa, in all fifty-seven and one-half ( $57\frac{1}{2}$ ) million yens, including the cost of the fortifications constructed. It is not known what amounts have been expended in pensions and military rewards. The interest on the loan, which is provided for by a sinking fund, adds about six and one-half million yens to the annual budget. To these direct expenses there must be added, also, the losses incurred by private interests, which latter it is very difficult to estimate even approximately; it appears, however, that the country did not suffer very greatly from these losses, of the extent of which an indication may be found in the comparative table below, giving, in millions of yens, the revenue from taxes of 1892 to 1896.

\*In studying financial questions in Japan, it is indispensable that account be taken of the variation in the value of the yen, which steadily decreases up to 1897, because of the depreciation of the value of silver bullion; 100 yen in 1897 were worth only as much as 75 yen in 1887, and 50 yen in 1872. Since 1897, that is, since the adoption of the gold, instead of the silver, standard in Japan, the value of the yen has remained practically unchanged, that is, about 50 cents United States money.

*1892-93	1893-94	1894-95	1895-96	0.4 of which came under the new tariff.
66.42	69.17	70.42	73.57	

If, after the war, Japan had not increased her military force; if she had continued to develop slowly, and with due regard to economy, her victory over China would really have resulted to her pecuniary advantage; for the indemnity paid by China was over three hundred fifty million yens. But the success of the Japanese arms had this result, that it developed to excess their national *amour propre*, and established a vast programme of national expansion, especially in military matters. This programme involved the following outlay:

Army.....	81,680,827 yens.
Navy.....	213,100,659 "
Railways.....	107,181,894 "
Other public works.....	28,694,692 "
Total.....	431,294,672 "

After the war, the period of tranquillity which had preceded it gave place to a period of agitation, and the economic development of the country kept pace with that of its military power.

Nothing could stop the Japanese government in the realization of its plans; neither the acute monetary crisis resulting from the depreciation of silver bullion, which carried with it a great increase in the cost of living, and necessitated a corresponding increase in the salaries of officials; nor the unfortunate consequences of a wild speculation, which, at the beginning of 1898, gravely compromised financial, industrial and commercial affairs. With an energy and tenacity truly remarkable, Japan surmounted all difficulties, and put into operation all proper means to carry out the task she had set for herself.

Direct taxes were increased about one-half; indirect taxes were quadrupled; and not only was an equilibrium established between receipts and expenditures, but an actual balance to the credit side was created, which is shown by the following table:†

	Receipts Yens.	Expenditures Yens.
1883-84.....	83,106,858	83,106,858
1893-94.....	113,769,380	84,581,872
1903-04.....	251,681,961	244,752,346

\*The fiscal year in Japan is from April 1 to March 31.

†*The Nineteenth Century and After*, London, April, 1904, "Japan's Financial Position," by O. Eltzbacher, which is based on statistics published in Japan and placed at the author's disposal by Viscount Hayashi and Mr. Zamoraki, formerly Chief of the Bureau of Statistics in the Department of Finance.

It is true that the public debt of two hundred sixty-one million yens, in 1893, had increased to over five hundred millions in 1903.

Since 1896, almost two hundred fifty million yens had been expended for the army and navy on extra appropriations, and at the same time the ordinary annual appropriations had increased by almost two hundred per cent. for the army, and over two hundred fifty per cent. for the navy. The ordinary appropriations for the year 1903-04 were about thirty million yens for the navy, and about forty-two million yens for the army.

Immediately after the campaign in China, it was decided to create many new units in all arms; to transform the armament and artillery; and to organize the coast defense. In all its essential parts, this plan was realized before the beginning of the present war. By the first of December, 1899, there were two hundred fifty thousand men ready to take the field on the continent. At present, the active army consists of three hundred thirty-nine thousand men ready for mobilization; and this army, on a war footing, possesses its full military value.\*

The increase and re-enforcement of her land forces was an immediate necessity for Japan from the moment in which she foresaw the eventuality of a conflict with Russia, that is to say, with a nation provided with a modern military organization. When, in 1898, the Government had to ask the country for an increase of the land tax, which was passed by a majority of five hundred votes after a contest without precedent in the parliamentary annals of Japan, Count Hagaki, formerly Minister of the Interior, leader of the Liberals, explained very clearly, in the following terms, the obligations under which Japan found herself to reorganize her army on a solid basis:

"Japan, being an insular country and her policy being a defensive one, it seems at first glance that we might content ourselves with a powerful navy. But it must not be forgotten that the best method for any country to be always ready for its own defense is to be capable also of assuming the offensive on occasion; and this is the reason that Japan must have a numerous and well-organized land force. Moreover, we will

\*"The Japanese Army," February, 1904, brochure extract from the *Revue des Armées Étrangères*, edited by the Second Division, General Staff of the Army: Paris, Chapelot & Co.

have a far better chance of finding an ally if we have the power to put at her service a numerous army. As a matter of fact, our position confers upon us the privilege of being the only nation capable of using a powerful military force in the extreme Orient. Russia herself, with her enormous military organization, would without question be at the mercy of insurmountable difficulties in bringing a serious expedition to these coasts, where Japan, on the contrary, would have a comparatively easy success. Thus we see that, since the value of Japan as an ally depends upon her army, she must, in order to play an effective rôle in accord with another power, look carefully to the organization of her land forces, and neglect nothing necessary to put them on a perfect footing."

This significant declaration, considered in connection with present events, needs no commentary.

But in an insular country, it is not everything to have a numerous and veteran army. If it be necessary to take the offensive outside of the national territory, it is essential to procure for the army the means of rapid transportation, suitable for its numbers and material. In other words, financial preparation is absolutely indispensable.

In 1894, the Japanese Merchant Marine comprised only one hundred seventy thousand (170,000) tons, consisting, in great part, of old coasting vessels of small tonnage. The "Nippon Yusen Kaisha" Company was called upon several times during the Chinese-Japanese War to undertake, single-handed, the entire transport service; but, in that case, it was only a question of seventy-five thousand men; it was foreseen that, in the future, there would be far greater requirements of transport service, which might also have to be provided for in a very limited time; and this is what the Government did in 1896 by granting special subsidies to navigation and maritime construction. The first of these subsidies was that granted to every owner of a Japanese vessel of over one thousand tons, having a speed of at least ten knots per hour, for each voyage of at least one thousand miles. These subsidies increased with the length of the voyage, but more rapidly with the speed and tonnage of the vessel; thus, the amount was about twenty-four times as much for a vessel of six thousand tons, steaming fifteen knots, for a voyage of ten thousand miles, as it was for one of one thousand tons, making ten knots, for the same voyage. The subsidies for

construction applied only to vessels of over seven hundred tons, built in Japan.

The results of this encouragement by the government, were not slow to appear; at the beginning of 1898, the development of the merchant marine had already been considerable, as may be seen from the following table:

VESSELS CONSTRUCTED.*						
Years.	Steamers	Tons	Sailing Vessels	Tons	Total Vessels	Total Tons
1892	32	5,944	8	688	40	6,632
1893	26	3,967	4	459	30	4,426
1894	33	5,847	10	1,311	43	7,158
1895	47	8,977	6	951	53	9,928
1896	36	5,860	11	1,061	47	6,921
1897	57	10,690	18	2,472	75	13,162
1898	54	13,927	202	20,836	256	34,765
1899	53	18,159	216	20,342	269	38,499
1900	53	15,308	193	17,873	246	33,181
1901	71	31,829	202	20,259	273	52,088
1902	67	16,328	137	13,035	204	29,363
Totals.....	529	136,836	1,007	99,287	1,536	236,123

It seems that even the sanguine expectations of the government had been exceeded, for the subsidies were reduced; in spite of which the amounts paid out in 1903 were over eleven million yens. At that time the tonnage of the merchant marine had increased since 1895 by three hundred forty-five per cent., most of which was found to be in the steamship class. Recent events have shown the wisdom of Japanese foresight; as a matter of fact, since the beginning of the present hostilities the merchant fleet has been constantly employed almost exclusively in the transportation of troops and material.

On the subject of naval vessels, it was decided, in 1895, to construct one hundred nineteen ships, representing a tonnage of one hundred fifty-six thousand (156,000) and involving an expenditure of over two hundred million yens. This plan is to be completed in ten years. In 1903, the Japanese parliament voted a still further credit of over one hundred million yens for naval expenses. It was on this occasion that Count Katsoura caused general elections to be held, in order to rid himself of a chamber which was not disposed to consent to the new appropriations.

From a financial view-point, in what conditions did Japan find herself on the eve of the present war?

\**L'Economiste Français*, 20 Fevrier, 1904, "Letters Japonais," Paris.

According to trustworthy estimates, the public debt had increased to five hundred twenty to five hundred forty millions of yens.\* This amount does not reach two and a half times the annual revenue; while this proportion (public debt to revenue) is five in England, seven in Italy, and eight in France.

On the basis of official statistics dating from 1895, the public wealth of Japan was estimated in 1898 at about eight milliards of yens; a recent valuation places this figure at nearly ten milliards.†

Nearly two-thirds of the public debt is held in Japan, and almost all the remainder in England. Russia owes twenty times as much abroad as she does at home, and foreign capital placed in the country is guaranteed forty times higher than national (domestic) capital.

After 1899, it was easily seen that gold was flowing out of Japan to an alarming extent; in fact, at the end of 1900, the situation as to the amount in circulation and that held in reserve was not at all promising. At this time, the fiducial circulation was about two hundred thirty million yens; the actual money in circulation (gold and silver) was less than ninety-two million; the guaranteed reserve, coined and bullion, was only sixty-five millions in gold and two millions in silver. The government set to work to remedy this situation which was capable, in case of war, of producing grave embarrassment. At the end of 1903 the monetary circulation was over two hundred fifty million yens, of which about one hundred fifty millions was in gold; the guaranteed gold reserve had increased to over one hundred million yens.

Japan had several disposable funds; that for renewing the naval marine, thirty million yens; the contingent fund, ten million; and the instruction fund, ten million. But figures are

\*518,764,195 yens—*Journal des Economistes*, Paris, February, 1904. "Japanese Finances," by L. E. Alphonse Millet; 56,350,000 pounds sterling. *The Nineteenth Century and After*, April, 1904, "Japan's Financial Position," by O. Eltzbacher.

†Lands of all classes.....	5,517,073,696 yens.
Capital of commercial and industrial companies ....	1,028,299,274 "
Treasury and bank notes.....	510,189,078 "
Houses, edifices, establishments of all sorts .....	800,000,000 "
Operating funds of companies, mines, vessels, boats, horses, animals and other property.....	2,000,000,000 "

Total..... 9,855,562,048 "

Valuation by the authors of a plan for fiscal reform.

*L'Economiste Français*, 20 February, 1904, "Japanese Letters."

not everything; there are some years in which these different funds amount to not over fifteen millions in gold, the remainder being in Japanese paper money.

Since the war, three loans of one hundred millions each have been subscribed, two in Japan, in which the Emperor personally took twenty millions each time, and one abroad, in England and the United States. Japan's credit is not exhausted, for these different loans have all been oversubscribed. As a last resort there are still the historic treasures of the Daimos, of which the impending conversion into money has already been erroneously announced in France.

But what will the war cost?

War is admittedly a very expensive thing. That of 1870-71 cost France over eight milliards of francs, of which five milliards was the indemnity paid to Germany; since 1895 England has expended over six milliards of francs, of which the greater part was absorbed by the South-African campaign. The war of 1877-78 cost Russia four milliards of francs. But it is very difficult, if not impossible, to draw from any particular case the data necessary to give an approximation for any other particular case; as far as England is concerned, the following table will show at once that no reasonable comparison can be based on the duration of the operations or the numbers of the troops engaged.

Theater of Operations	Epoch	Number of months	Troops engaged	Cost in Francs	Table given in Parliamentary documents.
Chitral.....	1895	7	15,400	30,565,000	Bulletin of the Press and Military Library, Belgian Ministry of War, 2d Division, General Staff, June, 1903. No. 359.
Ashanti.....	1895-96	2	2,000	4,812,250	
Matabeleland...	1896	9	7,932	64,672,275	
Mashonaland...	1896	6½	2,120		
Mashonaland...	1897	10	770		
Soudan.....	1896-99	9	20,000	60,375,000	
N. W. India....	1897-98	8	5,200	65,000,000	
South Africa....	1899-1902	32	448,165	5,645,600,000	
Ashanti.....	1900	9	4,000	10,700,000	
China.....	1900-01	7	21,000	145,695,000	
Total.....				6,027,410,925	

In the case of Japan it would be extremely difficult to draw a parallel between the cost of the war in China and the present war, because of the different military organization, and because the prices of all sorts of merchandise increased very considerably between 1897 and 1900; and furthermore this increase was principally in the price of articles which are most



indispensable for feeding troops, and those most necessary for the supply of the army, the cost of which are now about double what they were before the war with China. It is true that the decrease in the value of the yen must be considered\* in this connection. In spite of all these difficulties, estimates of the cost of the war have been made and here are a few of them:

Before the war, the Japanese generals who were opposed, it is true, to a rupture with Russia, affirmed that each soldier cost the government eight yens per day; that is, one million six hundred thousand yens for an effective strength of two hundred thousand men to be thrown into Corea; and that the fleet would cost approximately the same amount. That means, then, an expense of ninety-six million yens per month.

Professor Rathgen mentions a total of loans of four to six hundred million yens.†

M. Paul Leroy Beaulieu estimates that with seven to eight hundred million francs (280 to 320 million yens), or perhaps a milliard of francs (400 million yens), which Japan can obtain, she will be able to carry on the war to the end of the present year or even longer‡

The *Correspondant* (Paris, 25 March, 1904: What will the war cost?) in a very remarkable anonymous article gives for the two belligerents a detailed tabular estimate of military expenses for the period of six months. We present here a recapitulation of this table, as far as it applies to Japan:

I. Land Forces.		Francs
A.	Mobilization.....	34,100,000
B.	Transport of rations.....	4,620,000
C.	Rations.....	49,345,000
D.	Pay of Troops.....	69,070,000
E.	Ambulance.....	4,600,000
F.	Clothing.....	26,400,000
G.	Losses in animals.....	18,750,000
H.	Railroads for the field.....	16,000,000
I.	Losses in war material.....	62,006,250
J.	Administration material.....	6,480,000
Total (land forces).....		291,374,250

\*See note on page 161.

†*Die Woche*, January 16, 1904, "Japans finanzielle Kriegsbereitschaft," by Prof. Doctor Karl Rathgen.

‡*Revue des Deux Mondes*, March 15, 1904, "Japan and Her Resources in the Present War," by Paul Leroy Beaulieu.

II. Naval Forces		Francs
A. Wear and tear of squadrons.....		222,660,000
B. Naval artillery.....		170,960,000
C. Torpedoes.....		13,500,000
D. Coal.....		7,105,750
E. Rations and pay of crews.....		7,575,000
Total (Navy).....		421,800,000
Grand total.....		713,172,000

This makes, in yens, about one hundred sixteen millions for the army, and one hundred sixty-nine millions for the navy, or, in all about two hundred eighty-five millions. This is about one-half as much as the amount given by the estimate of the Japanese generals.

According to the *Correspondant* a Japanese soldier eats each day about one kilogram of rice and one hundred grammes of meat; and drinks two litres of tea and coffee; this makes two kilograms of rations per day to be transported for each man. A soldier is paid two francs and twenty-five centimes per month in time of peace; an officer, a mean of twenty-five hundred francs per year; these rates are quadrupled in time of war. The losses in war material are estimated at one-quarter of the whole, based on the experience of the wars of the last half of the nineteenth century.

This calculation does not take into consideration vessels lost, the effects of the bombardments, etc., etc.

M. Paul Leroy Beaulieu\* expresses the opinion that the combined cost to the two belligerents will be not less than five milliards of francs, if the war should be prolonged beyond one year to fifteen months. On the basis of the estimate of the *Correspondant*, who figures Russia's expenses for six months at 1,097,167,500 francs, this would be two milliards of francs for Japan or about eight hundred millions of yens.

Time alone can tell which of these two estimates is more nearly correct; in any case, after having borrowed, when the war is finished it will be necessary to pay; and to pay, taxes will have to be increased. Professor Rathgen believes that it will be easy to create an annual supplementary revenue of twenty to thirty millions of yens. The increase in the land tax voted for five years in 1899 can be maintained, especially since the harvest of 1903 was exceptionally good; the building trade can be taxed, a measure already proposed, but rejected by

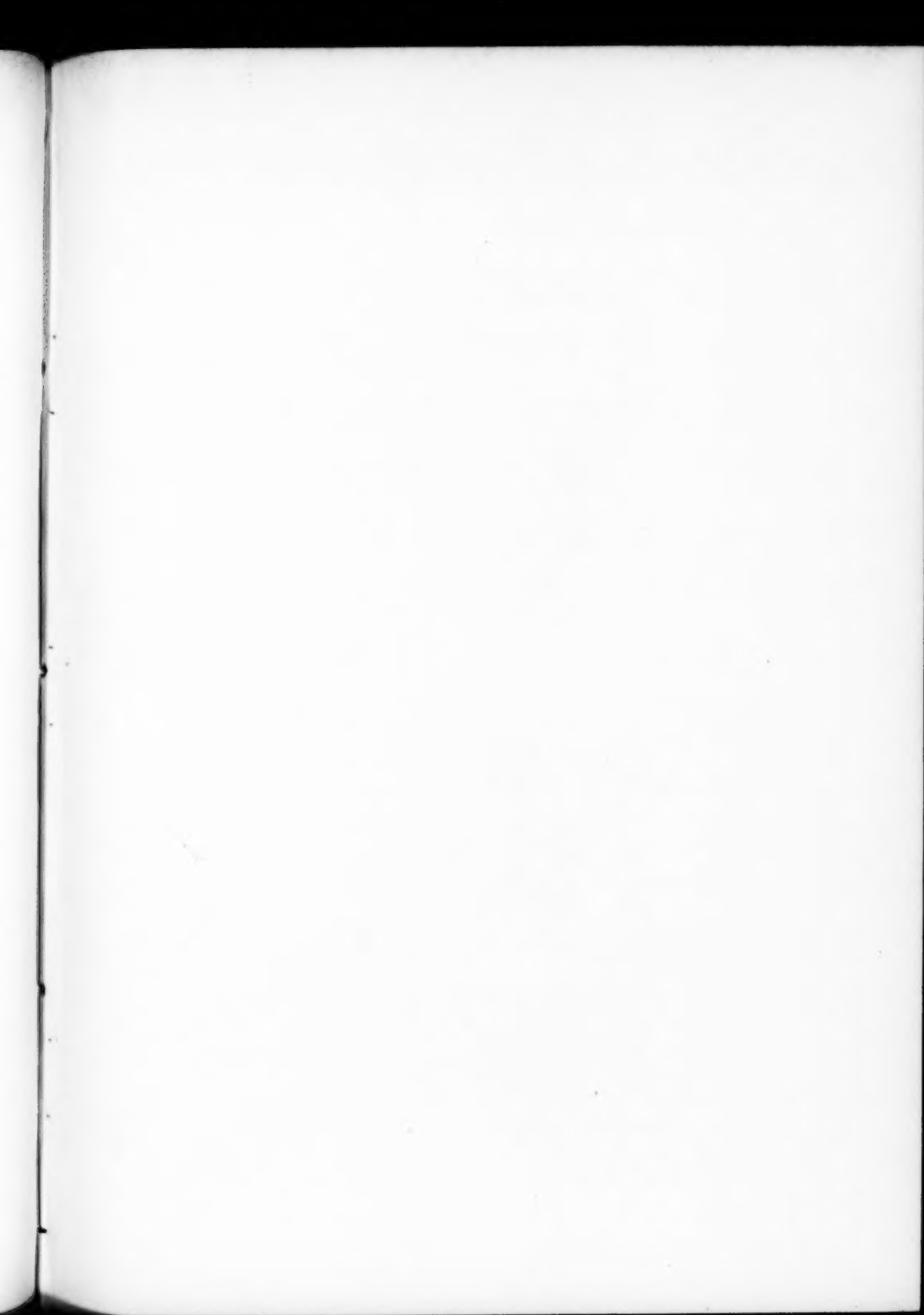
\**The Economiste Française*, May 14, 1904, "Events in the Extreme East and European Bourses," by Paul Leroy Beaulieu, Paris.

Parliament in 1898; the monopoly on crude tobacco may be changed into a monopoly on the manufactured article; or, still further, the export duty on petroleum may be increased and an excise duty be added to it, These would be the most important means of increasing the revenue.

Next to that between France and Germany, the Russo-Japanese War is the most striking event which the world can show; it is the fatal ending of a situation which has from day to day grown more and more tense in the Far East. Five years ago the celebrated Russian philosopher, the late Vladimir Solovioff, in describing the "yellow peril," predicted the occupation of Corea and Peking by the Japanese; he also prophesied at the same time their definite and final check by the coalition of Europe and the United States. I have endeavored only to indicate as clearly as possible in this special study, which shall be terminated here, the serious problems which the case presents.

BRUSSELS, June 17, 1904.







THE MONITOR AND MERRIMACK—HAMPTON ROADS—1862.

## THE ERA OF IRON-CLAD WARFARE.\*

BY BRIGADIER-GENERAL J. P. FARLEY, U.S.A. RETIRED.



THE remarks of Commander Steeman of the Ottoman Navy here find a fitting place, where he has said that, "It is an historical fact that the wonderful ingenuity displayed by the Confederates in devising and constructing self-acting and controlled submarine mines and surface spar torpedo-boats was one, if not the principal, cause of the protracted nature of the terrible struggle between the Northern and Southern States of America."

This sentiment is farther expressed in the words of a Confederate authority, who has truly observed that, "The mighty squadrons of Du Pont and Dahlgren were held in check by *fear* of the torpedo"—by its *moral power*.

Except for this, the Southern ports would all have been closed at an early day and the war brought to a speedier ending—an opinion entertained by more than one able foreign military critic.

The prevailing sentiment throughout the loyal section of the country, after the surrender of Sumter on April 13, 1861, demanded that the garrison of the fort should be restored and the Stars and Stripes again run up on the staff of the fort.

It was all one whether the solitary sentinel clad in the uniform of the United States Army were shot down at the sally-port of the abandoned fort or whether the halyard were shot away from the staff of Sumter.

In either case the insult was to the nation itself and in either event the word comes back, and with no uncertain sound: "Hands off!"

Anderson—Robert Anderson—a Southern man by birth and affiliation and a major of artillery in the Army of the United States, had decided, in the exercise of discretionary powers vested in him by virtue of his rank and position, that the hour had arrived when he should transfer his small command of nine commissioned officers and seventy (70) enlisted

\*The writer is under obligation to the Confederate authorities, Pollard and Johnson, for facts of interest which were not within the range of a Union officer's observation at the time of his service on the staff of Generals Gillmore and Seymour during the siege of Charleston, 1863-4.

men to a more tenable position—from Fort Moultrie to Fort Sumter, in Charleston Harbor. The removal took place on the night of the twentieth of December, 1860, the night of the day when the election of Abraham Lincoln as President of the United States was officially announced, and on the night of the day that the legally constituted authorities of the State of South Carolina passed the Ordinance of Secession of that State from the Union.

Anderson deemed the step taken by him as both wise and expedient and the one of all others best calculated to prevent a rupture with the State authorities. His destruction of the gun-mounts of Moultrie, spiking of its guns and practical wreckage of the fort's armament was not, however, viewed by those already in arms against the general Government as a proper line of action, and led to a demand being made for the immediate return of Anderson and his command to his original post. The Secretary of War, John B. Floyd, favored this, but finding his request unheeded he tendered his resignation as a member of the cabinet. Matters were now rapidly approaching a climax, and when the steamer *Star of the West* passed up Ship Channel\* on the morning of January 9, 1864, a shot was fired at first across her bows, and not heeding this a second shot was fired directly at the vessel, causing her to turn about and desist from further efforts to reinforce Sumter either with men or supplies. While it is the purpose of the writer to present the military situation as it appeared at the time, it is nevertheless a circumstance of interest to note how the several political parties were arrayed and the popular sentiment expressed. Pollard of the Richmond *Whig*, in his "First Year of the War," gives the vote for Lincoln as 1,858,200; for Douglas, 1,276,780; for Breckinridge, 812,500; and that for Bell, 735,504, a clear aggregate, as he has it, of nearly one million votes against Lincoln. At this juncture then, and on the night of the day when the vote was officially announced, Major Anderson passed into the fort which constituted the most formidable defense of the Harbor of Charles-

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\*Ship channel runs parallel for miles to Morris Island and within range of guns of small caliber. The *Star of the West* steamed up right under the 24-pounder battery commanded by Major Stevens and manned by the Charleston cadets. After the second shot fired from the 24-pounders, Fort Moultrie fired a few shots at the retiring vessel. The object, however, was to drive off the vessel, and the firing was without that hostile intent which evidenced itself in the bombardment of Sumter on the 12th of April, 1861.



ton, three and a half miles from the city itself. Fort Sumter was at the time practically completed and had received the greater part of its armament.

A brief description of the fort is essential to a fair understanding of its "*protracted and lionlike defense*," extending, as it did, over a period of years, marking the whole time of the Civil War.

In form the fort was pentagonal and built upon an artificial island which required ten years for its formation, and at a cost, for this foundation alone, of one million dollars. The chips and blocks were all brought from Northern quarries and imbedded in sand and mud.

The walls were of brick and concrete masonry 80 feet high, and varied in thickness from 5 to 12 feet. Four of its sides averaged 200 feet each in length, and the fifth or gorge side was nearly 350 feet long.

It was not contemplated by the designers of the fort that the work would ever be used against those whom it was built to defend, or that long range and powerful 8 and 10 inch rifled breeching guns would ever be brought to bear on its land side or weakest front. On this side the guns were in single tier and all *en barbette*, whereas on all other sides they were in three tiers, two in casemate and one *en barbette*.

Gen. P. T. C. Beauregard, a Major of the Engineer Corps, United States Army, was appointed, in January, 1861, Superintendent of the U. S. Military Academy by Secretary Floyd, but was relieved five days thereafter by his successor, Secretary Holt. At this juncture word had already come to the cadets at the Academy from the South that commissions awaited them in the Confederate Army. "First come, first served!" was the call from home.

Perhaps "one of the saddest experiences of the war was the observation of the deep-seated, firm conviction in the minds of many of the most highminded, religious Southern men and women, and growing from the first consciousness in the minds of their children, that their cause was a righteous one. It is not then surprising that the officers and cadets from the disaffected section could not bring themselves to give up the dearest ties on earth for a point of abstract morality

enveloped in a thick cloud of casuistry to become a reproach and an outcast in the land of their fathers!"\*

Shortly after Major Beauregard's relief from duty as Superintendent at the U. S. Military Academy he resigned his commission in the Army and was appointed General Commanding and Engineer-in-Chief of the forces of the State of South Carolina.

The guns and carriages, rendered unserviceable by Anderson on the abandonment of Moultrie, were soon replaced and in a short time Beauregard had 38 guns, of various calibers, well mounted and protected by merlons and traverses in batteries on Sullivan's and Morris Islands. At Cumming's Point, Morris Island, south of and opposite the least defensible face of Sumter, the nearest point of land to that front, batteries for mortars and columbiads were constructed and protected by novel and formidable facings of iron.

Another novelty in iron fortifications was also perfected—a floating battery, consisting of palmetto timber faced with plate iron and embrasured for four guns of heavy caliber.

The batteries on Morris Island took Sumter completely in reverse, and at a point, as has before been stated, from which attack was not anticipated when the fort was designed.

Shortly after the inauguration of Abraham Lincoln the frigate *Powhatan* was made ready for sea and, with an armament of ten heavy guns and four hundred men, was in readiness on April 6, 1861, to convoy the transports *Atlantic*, *Baltic* and *Illinois* to Southern waters.

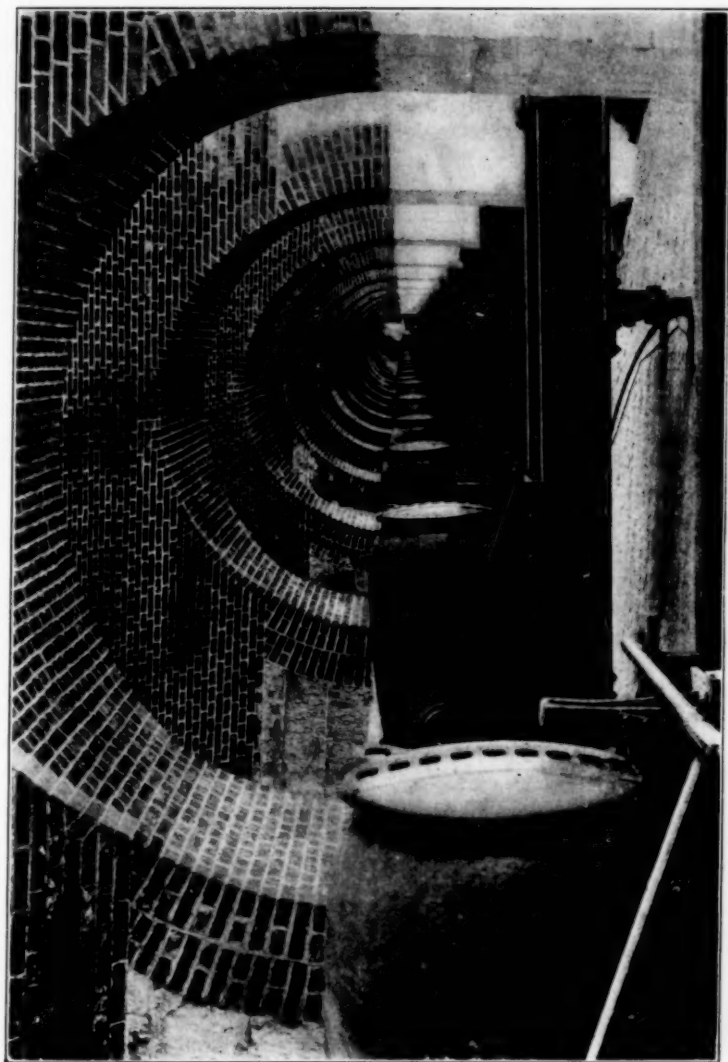
Two days after this the *Atlantic* sailed for the relief of Sumter with Light Battery "A," Second Artillery (four guns and ninety-one men), four hundred soldiers and a large quantity of supplies.

At the same time eleven other vessels were placed in readiness for an emergency—their armament aggregating 285 guns, with a force of 2,400 men.

The fleet dispatched to Charleston Harbor consisted of the

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\*In justice to the Military Academy and to its graduates, and in order to correct a general misapprehension, it is well here to say that four-fifths of the living graduates at the outbreak of the Civil War remained loyal, and of the number born in, and appointed from, the slave States (then so called), one-half remained true to the flag under which they had fought in the war with Mexico and in the Indian contests on the plains. Many of these were veteran soldiers who, like Thomas, Emory, Hunter, Anderson, Benét, and scores of others too numerous to mention, had broken away from the ties of home and linked their fate with that of the profession of arms.



WATER BATTERY—1862—FORT MONROE.

*Pawnee*, *Powhatan* and the cutter *Harriet Lane*, together with the transports before named. This action on the part of the Federal Government so incensed the South Carolinians that, before sunrise on the 12th of April, fire was opened upon Sumter, Anderson having refused to surrender the fort. The fire was very deliberate and effective, more particularly from the battery at Cumming's Point, and the floating battery before described dismounted two of Sumter's parapet guns.

The shore batteries were served with effect and shells were dropped, at frequent intervals during the day, into the fort, and as Pollard describes it, the "contest had been watched by anxious and excited citizens from every available point of observation in Charleston—the battery, the shipping in the harbor, and the steeples of the churches—and as night closed the illuminations of the shells as they coursed the air added a strange sublimity to the scene to men who had never before witnessed the fiery splendors of a bombardment.

"The next morning, at seven o'clock the fort resumed its fire, doing no damage of consequence. A short while thereafter the fort was discovered to be on fire and through the smoke and glare its flag was seen to be at half staff, a signal of distress. The Federal fleet which was off the bar, contrary to all expectations remained quietly where it was: neither stirring from its anchorage nor firing a single shot."\*

Anderson had defended Sumter until his quarters were entirely burned, the main gates destroyed, the gorge walls impaired, the magazine surrounded by flames and his scanty supplies all but exhausted.

He accepted the terms of evacuation offered by Beauregard prior to the commencement of hostilities, and marched out of the fort with colors flying and drums beating, bringing away his company property, and saluting his flag with fifty guns.

On April 13, 1861, General Beauregard writes: "Apprised that you desire the privilege of saluting your flag on retiring, I cheerfully concede it in consideration of the gallantry with which you have defended the place under your charge."

In firing the salute to his flag before marching from the fort, one of Anderson's men was killed and three received

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\*The South Carolinians claimed that the inaction of the fleet, under all the circumstances of the case, warranted the inference that the general Government did not expect or desire victory—but had taken a step well calculated "to produce a war," by sending the fleet to Charleston Harbor.

severe injuries by the bursting of a cannon, but there were no casualties in the fort during the period of the engagement itself.

The disaster at Bull Run, in July, 1861, occasioned much delay in fitting out an expedition which finally set sail from Annapolis, Md., commanded by Brigadier-General T. W. Sherman ("Tim" Sherman), convoyed by a fleet of naval vessels under command of Commodore S. M. Dupont, and arrived at Hampton Roads, Va., on the following day, October 22, 1861. This force put to sea seven days after, under sealed orders, and arrived at Port Royal, S. C., on the 1st day of November. Adverse winds and perilous storms were encountered, and several of the transports were delayed and two lost; the *Winfield Scott* had to sacrifice the whole of her cargo and the *Roanoke* a portion of hers, to save the lives of the regiments on board.

The vessels of the naval fleet suffered much and some of them were lost.

Fort Walker, Hilton Head Island, and Fort Beauregard, Port Royal Harbor, were attacked on November 7th, at 9.30 A.M., and, after being under an incessant fire for five hours from the fleet, with loss of ten killed and many of their garrison wounded, the forts were evacuated by the enemy.

"The armament of Fort Walker consisted of one 10-inch columbiad model, bored to a 32-pounder and rifled one 8-inch; columbiad model, bored to a 24-pounder; one 8-inch columbiad, nine navy 32-pounders, three navy 42-pounders, three navy 8-inch howitzers, two 24-pounders; two 42-pounders, caronades, and two English long 12-pounders."

General Sherman, in speaking of this engagement, says: "I was a mere spectator of the combat, and it is not my province to render any report of this action, but I deem it an imperative duty to say that the firing and maneuvering of our fleet against that of the rebels and their formidable land batteries was a masterpiece of activity and professional skill that must have elicited the applause of the rebels themselves as a tactical operation. I think that too much praise cannot be awarded to the science and skill exhibited by the flag officers of the naval squadron and the officers connected with the ships. I deem the performance a masterly one, and it ought to have been seen to be fully appreciated. After the works were reduced I took possession of them with the land forces. The beautifully constructed work on Hilton Head was severely crippled and many of the guns dismounted. Much slaughter



FORT WALKER, S. C., 1861

had evidently been made there, many bodies having been buried in the fort, and some twenty or thirty were found some half a mile distant.

"The island for many miles was found strewn with arms and accoutrements and baggage of the rebels, which they threw away in their hasty retreat. We have also come into possession of about forty pieces of ordnance, most of which is of the heaviest caliber and the most approved models, and a large quantity of ammunition and camp equipage."

With Hilton Head Island and Beaufort on the mainland in possession of the Union troops, and Fort Pulaski at the mouth of the Savannah River captured (April 11, 1862),\* the Union forces were thought to be as well established to break the enemy's line of communication (Charleston and Savannah R.R.) along the coast, as if Charleston or Sumter had been held by the Federal troops.

There were other reasons, however, why these latter points should be made to succumb to the Union arms. The blockade of Charleston's fine harbor and the various inlets from the sea was not as effective as desired, and daily the low-lying blockade-runners with raking mast and lead-colored hulls slipped in and out through the cordon of Union vessels in spite of the greatest vigilance.

There were no search-lights in those days (save a calcium light on the *New Ironsides*) and the fog hung heavy at times along that coast. But it was under cover of darkness, more especially, that the blockade-runners were successful in entering and departing from the harbor, and probably the largest portion of the Confederate importations were effected through this channel. In fact, it is said, that the date of departure of blockade-runners was regularly advertised.

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\*Fort Pulaski, like Fort Sumter and many other forts similarly located along the Atlantic coast for harbor defense, was pentagonal in form; casemated on all sides, the gorge wall being protected by a demiline. Its armament consisted of forty-eight guns mounted *en barbette* and in casemate and commanding both channels of the Savannah River.

The fort was adapted for 140 guns of all calibers, with walls 7 inches thick and 25 feet high, reckoning from high-water mark.

The Union batteries established on Tybee Island by General Q. A. Gillmore, had for their armament 36 guns and mortars, mounted at distances from the fort of 1,600 to 3,400 yards. After a bombardment of two days, in which 5,275 shots were fired from the Union batteries, the fort surrendered with its garrison of 385 men. The breaching of the fort, near the exposed magazine was the cause of its early surrender, although the casualties on the Confederate side were inconsiderable. The feeble defense of this fort is in striking contrast to the resistance offered by Sumter.



Some great effort, therefore, had to be made by the Federal Government to stop this traffic on the part of the Confederates with both France and England.

With this end in view, General David Hunter, who commanded the Federal troops, with his base of supplies at Hilton Head, S. C., advanced in the early spring of 1862 upon the City of Charleston by way of the Stono River and James Island. His force of twelve thousand men of all arms experienced a sturdy resistance from an enemy well intrenched with some eighty guns, and somewhat superior in point of numbers. The loss, in killed and wounded on both sides, in a series of assaults by the Union troops on James Island, was estimated at eight hundred and eighty-eight, and in the ratio of three to one against the attacking force.

No concerted attack of the Army and Navy could well be made on the outer or seacoast defenses of Charleston harbor until the new fleet of monitors, eight in number, was in readiness to co-operate with the land forces. The *New Ironsides*, an iron-clad propeller, carrying fourteen smooth bore 11-inch Dahlgrens in broadside and two pivot rifled 8-inch 200-pounder Parrott guns, was the flagship of the new fleet—Commodore S. F. Dupont,\* commanding.

At the hour of 3 P. M., on April 7, 1863, thirteen months after the first and memorable epoch in iron-clad warfare—Hampton Roads, Virginia† the signal was set for the attack upon Fort Sumter.

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\*Later succeeded by Admiral Dahlgren.

†March 9, 1861, marked the close of the wooden epoch in naval warfare and the opening of "the iron with a distinctness as startling as it was momentous." Ericsson, a Swede by birth, became a naturalized American. In 1854 he submitted a plan to the French Government, during the Crimean War, which was similar to that of his "Monitors" of later construction. France and England had their *Gloire* and *Warrior* before the monitors appeared, but it was a debatable question as to their merits. As early as October, 1861, Hollins with the *Manassas* at the mouth of the Mississippi River might have done almost what was done by the *Virginia*. The *Manassas* was, however, but a river steamer made over as an iron-clad.

August 3, 1861, an Act of Congress called for bids on iron-clad vessels, to be completed in 100 days, and to have a speed of eight knots; \$275,000 was appropriated and seventeen plans were submitted.

The contract for the *Monitor* was awarded in October, 1861. She was completed in 140 days, and left New York on the night of March 6, 1862.

The *Merrimac* or *Virginia* was the old steam frigate which was sunk at the time of the abandonment and destruction of the Norfolk Navy Yard. She was raised and built over with inclined sides (slope 36°) and protected with 4 inches of iron on 4 inches of oak and 20 inches of pine. Her bow was wedge-shaped, of cast iron, weighing 1,500 pounds, and was entirely below

Commodore Dupont's orders were couched in no uncertain terms, and were well calculated to stimulate the enterprise, "The glorious achievements of our Navy," so the Secretary expresses himself, "inaugurated by yourself, give every reason to hope for a successful issue at this point, where rebellion first lighted the flame of Civil War."

At no time during our civil strife did the people of both sections await with greater anxiety or concern the issue of this struggle for the possession of Fort Sumter. The officers and the men of the fleet well knew the consequences of failure and that the new-born squadron was for the first time on trial before the world.

In the race for honor "Old" John Rodgers led the fleet in his little Weehawken, and was closely followed by the Patapsco, Percival Drayton commanding.

A single file of pigmy crafts, with the *New Ironsides* standing out like a monster midway of the line and flying the Commodore's flag.

Right up and under Sumter's frowning Columbiads they took their stand, and in twenty minutes after the first shot was fired, the entire fleet became engaged, making the scene, as Johnson the Confederate engineer describes it, "one of unparalleled grandeur." The eighty guns on Sumter's walls were more than a match for something less than half this number which equipped the fleet, although the disparity in point of weight of metal was by no means so great.

Of the details of this contest let others speak, as well as of the mortification and disappointment of the captain's of the fleet, of whom none were more emphatic in expression than the commander himself. Here are his own words, in reporting upon the monitors—they "are miserable failures so far, where forts are concerned; the longest was one hour and the shortest

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the water-line. Her armament consisted of ten heavy guns—six 9-inch rifles and four 7 and 6½-inch rifles.

The *Merrimac's* draft being 22 feet, the pilot refused to take her out at first, and the attack of our score of wooden vessels, carrying 300 guns, was postponed until Saturday, March 8th.

The first shot from the bow gun of the *Merrimac* at less than a mile range killed and wounded ten men at the after pivot gun of the *Cumberland*, and the second shot killed and wounded twelve men at the forward pivot gun. The *Cumberland* lost one-third of her crew, and the *Merrimac* two killed and nineteen wounded. The contest between the *Monitor* and *Merrimac* is so familiar as not here to be described. The *Merrimac* was very unseaworthy, and to this extent not so formidable. She was burned up May 11, 1862. The *Monitor* went down at sea December 29, 1862, with one-half her crew.

forty-five minutes under fire, and five of the eight wholly or partially disabled."

The tide taken at the ebb for the attack, proved particularly unfortunate for the *New Ironsides*, which striking her bow, first on one, and then on the other side, rendered her, when under slow speed, almost, if not entirely unmanageable, and this formidable iron-clad, from which so much had been expected, drifted out of fighting range and nearly stranded under the guns of the shore batteries.

The *Weehawken* and the *Patapsco* had their turrets jammed and were *hors de combat*, after nine (9) shots fired, each having received four hits, in the time they jointly delivered but a single shot.

Familiar as our people are with the details of the engagement in Hampton Roads, Va., it is a singular fact that so little is known of this day's work in Charleston Harbor. The *Nahant* fared as badly as had the *Weehawken* and *Patapsco*, while the *Passaic's* rifled gun was silenced.

Early in the fight the *Nahant* was crippled and the *Keokuk* with her double (stationary) turrets, "fought to a finish" sinking on the following day off the south end of Morris Island.\*

The *Montauk* and the *Catskill* were in fact the only monitors of the fleet, "as it passed in solemn procession past the flagship," on withdrawal from the fight, in condition to renew the attack.

Not less than one hundred guns had rained down shot and shell upon the armored turrets and decks of our little monitors during the two or more hours of the engagement.

Two thousand shots had been fired from the forts with four hundred and fifty resultant hits, while the entire fleet had returned this fire with but one hundred and forty shots, and with little, if any damaging effect, although as Major John Johnson tells us:

"The powerful shocks given by the projectiles, 15-inch and 11-inch smooth bore and 8-inch rifles, to the masonry of the fort was something new and startling."

"The massive walls, piers and arches seemed to tremble to their foundations. And when, especially the bursting of the largest shells

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\*When the fleet retired to Port Royal, five days after the engagement with the fort, the *Keokuk* was not entirely submerged, and the Confederates came out of their stronghold and by the most skilful methods, succeeded in removing this monitor's two 11-inch Dahlgrens, and placing them in the salients of Fort Sumter. Commodore Dupont was much censured for his neglect in not providing against such contingency, or, better, what may be denominated, *achievement* of the Confederates.

occurred at the moment of impact, the loosening, shattering effects attending the shock exceeded all expectations.

"But as a whole, the fort had scarcely lost any of its fighting capacity or real efficiency in an action lasting two hours, and twenty minutes.

"The fleet went at the fort it had come to attack, paying no attention whatever to the other batteries in the harbor. Upwards of one hundred guns, the heaviest cannon of all descriptions were flashing and thundering together, shooting their balls, their shells, and their fiery bolts with sound, and shocks of powerful impact, that surpassed all previous experience of war.

"The smoke of battle, brightened by the sun in snowy clouds, seemed to the distant observer, to entirely envelop the small objects on the water which were causing all the trouble. Only when the light breeze availed to lift, or part and roll away slowly the heavy masses, could a glimpse be had of the squadron. The water all around the ships was seen, on nearer view, to be constantly cut, ploughed and splashed with every form of disturbance, from the light dip of the ricochet shot, to the plunge of the point blank missile; from the pattering of broken pieces of shot falling back from the impenetrable turrets, to the sudden spurt of spray sent up by a chance mortar shell exploding just beneath the surface of the water.

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"Twenty minutes of action had been full of incident. It then became only too evident that the defensive advantages of the armored vessels, had been attained at the expense of their offensive power.

"There was chagrin and mortification at the defects felt by its (the fleet's) officers, and at the storm of national displeasure raised by the Northern papers. The commander of the squadron, to use his own words, reported to Gen. David Hunter, that '*in attempting to take the bull by the horns, he was too much for us.*' "

Dupont, in determining not to renew the attack, says: "In my judgment, it would have converted a failure into a disaster," and in describing the action, he adds: "It was fierce and obstinate, and the gallantry of the officers and men of the vessels engaged was conspicuous." The Confederates did not, however, learn for months after how severely the squadron had suffered, but that it had failed to meet expectations was only too apparent from its retirement five days after the engagement to Port Royal Harbor.

It would be invidious to refer to one more than another of the gallant captains of the fleet, but no less than three men of distinguished lineage were there to aid in the effort to recapture Fort Sumter. "Old John" Rodgers was there, the man who put to sea in a wild southeast gale, full grown, and out for business, to see if that new-fangled cheese box on a "raft," as we were wont to call it, would stand it. If so, a new departure, a fresh page of history. If not, his life and

those of a whole "man-of-war's" crew would be well bestowed in settling this question of *first-class warfare*.

George Washington Rodgers was there, and his *Catskill*, which fared so well in this early fight, was yet preserved to bear him to a sailor's grave. Before Wagner, on an August day of this same year, the *Catskill's* flag dropped to half mast in token of her loss, and this, too, in the very front of battle. A messenger of death from the shore batteries, a 10-inch columbiad shell, sheared out a section from the roof of the pilot-house on top of the turret, and driving it in killed the captain and his pilot where they stood. The cheers from the exultant Confederates, when they saw the *Catskill's* flag lowered to half mast, led to an order that such signal of distress must not again be set when vessels were in action.

The name of Rodgers is linked with deeds of valor in the annals of naval warfare, but it remained for Calhoun and not for her former commander, Rodgers, to take the *Weehawken* into Charleston's Harbor, on a later day\* and to strand her under the very guns of Moultrie. There she lay, exposed "between wind and water," but "giving as good as she took," and one of her eighty well placed shots made short work of Moultrie's magazine. The *New Ironsides* came to her aid and silenced Moultrie's guns, but not before Calhoun† had read the signal from the flag-ship, "Well done, *Weehawken!*" "Don't give up the ship!" and not before the *Catskill's* selected crew, with Longshaw at the helm, had made the bold and desperate venture to carry a hawser to the sister ship—a hawser three times cut, and in a sea, lashed by the missiles of a score of guns. "Well done, *Weehawken!*" Well done, *Catskill!* say we.

\*September 7, 1863.

†The admiral has justly said, in speaking of Calhoun, "He compensated his misfortune by the handsome manner in which he retorted upon the adversary and defended the glorious flag which floated above him," and thus it was that the *Weehawken* was saved to float away with the rising of the tide.

[TO BE CONTINUED.]

## VALUE TO SEA-COAST FORTS OF THE LAND DEFENSE.

BY CAPTAIN W. W. HARTS, CORPS OF ENGINEERS, U. S. ARMY.



UT few fully realize what the fall of Port Arthur would mean to Russia. This port is so well recognized by both belligerents as a key point of tremendous value, that almost super-human efforts are now being put forth by Japan to capture it and by Russia to retain it. The reason is not far to seek. It is more than geographical and more than strategic, for the possession or loss of this port by Russia will go far toward her success or failure in the present war. Aside from the loss of prestige among all nations, and especially those of the Orient, that its capture by Japan would entail, aside from the pecuniary loss of dockyards, storehouses and the ice-free port Russia has so long coveted, its fall would seem to inevitably crush out the slim hope that the command of the sea could be wrested from her nimble and courageous enemy during the present contest.

In nearly all wars the command of the sea is of enormous value, but no recent war has shown so clearly the reasons. Russia's long line of supply by rail is a slender thread on which to hang all the chances of success in a war of this magnitude. Japan's command of the sea and the nearness of her bases of supply, make her line of communications much simpler and safer. We thus see that the control of the sea in Asiatic waters is the first important determining factor in the present war, which Japan, with intrepid dash, has practically secured for herself by her first blow. Without this sea command no troops nor supplies could be safely sent from Japan even across the Korean Strait, and no campaign on Manchurian soil could ever have proceeded. On the other hand, if Russia could even now sufficiently reinforce her Asiatic squadron from her home station, a victorious campaign on land by her forces would not be necessary. In such a case the Japanese successes on shore would at once be shorn of their fruits. Thus every week that Port Arthur can hold out against her assailants, gives that much more time for Russia to collect

such vessels as she can to send to Asia to change the balance of naval power in the Yellow Sea. It is readily seen how valuable such delay might be. Without Port Arthur the present Asiatic fleet of Russia is almost helpless, her Baltic fleet has no suitable point of support should it go to the scene of war, nor place of supply and repair, and Russia's campaign must mainly narrow itself down to a resistance on land where all the chances are as usual with the attacking forces.

Port Arthur for Japan means a new base, a shorter and better line of supply and a prestige of enormous benefit to her international standing and to the morale of her troops.

Port Arthur has easily resisted all naval attacks, of which there have been many. The fortifications of the port appear so carefully placed that the port is practically impregnable from the sea. They are sufficient to protect not only their defenders, but the naval station and dockyards as well. They afford a safe protection for the vessels of the squadron now besieged there. The futility of such bombardments by the heavy ordnance of the Japanese ships as have already taken place are fairly plain, so that following the plans found so successful in her Chinese war, Japan is attacking the weak side of the defenses of this stronghold—the land side. We thus see the recent efforts of the Japanese to capture Port Arthur mainly devoted to the attack on the land defenses. As long as these hold out the fortress can be held for Russia. Consequently the prestige, if not the fate of a nation, is largely dependent in an important war on the land defenses of a single sea coast fort. The lesson is obvious.

Nor is this an isolated case. In 1900 in the war with China by the allied European nations, the forts at Taku were handled with enough skill to sink a Russian gunboat, to seriously injure a German ship, and to cause the other attacking vessels to temporarily withdraw. How easily the forts yielded when attacked in the rear by a small landing party is probably well remembered. The slight mud walls were easily taken and a sea coast work that had held a formidable fleet at bay, fell before the courageous attack of a small landing party.

Again in 1894 when the Chinese-Japanese war was being fought, the forts at Port Arthur and Wei Hai Wei were not even engaged by the Japanese fleet, but were both attacked and captured with little loss of men or time by landing infantry in the rear of both places and attacking the land defenses.



In the Spanish war two examples are eloquent in illustrating the same principle. San Juan, Porto Rico, was bombarded by Admiral Sampson's fleet for three and one-half hours on May 12, 1898. The antiquated batteries were too far behind the times to reply with any effect, but the fortifications were not only not captured, but were not even seriously injured. On the other hand, the siege and bombardments at Santiago, Cuba, showed plainly that shore batteries can stand a great deal more bombardment without injury than is ordinarily supposed, and that final capture almost invariably requires an infantry attack.

In Alexandria, Egypt, in 1881, the British fleet for one entire day bombarded the poorly built and worse defended fortifications of the town. For the entire day the defenses held out against a powerful English fleet, with only nominal damage, and had perhaps actually the best of the fight until attacked by a landing party on the flank and in the rear.

The conclusion is inevitable that well built, well armed and well defended sea-coast works finally yield only when overwhelmed by an infantry attack. The enormous importance of the land defense is thus easily recognized.

In what should this defense consist? Time is an important element in all the operations of war. A defense that will delay the attack until the defense can be strengthened, has already performed a large share of its duty. It is manifestly impracticable in many, if not most places, and perhaps undesirable if not impracticable, to surround the sea-coast fort on its land side with a series of elaborate land forts and detached works that are so much in evidence in some of the fortified cities of Europe. This not only gives an inflexible plan of defense but permits the attack to be more easily directed and therefore more easily executed. But these are not the main reasons. The ground itself in many, if not most sea-coast forts, would not admit any such plans.

The land defense is naturally divided into two classes: (1) That which can be improvised and would be best left until the time of active hostilities to be worked out according to the needs of the case, and (2) that which must be attended to in times of peace and cannot be left to the chances of being properly supplied in the excitement of the last stages before hostilities begin. The quickness of blows in the present Russo-Japanese war, shows more than ever the value of being

ready. The amount of land defense necessary at any sea-coast fort to be prepared before hand varies with the importance of the place, its probability of being attacked and the force likely to be brought against it. In any event, more or less elaborate field works will, necessarily, be the basis of this defense. For all sea-coast work, however, it would seem that at least two lines of defense should be provided for, an inner and an outer line. The outer line need be only planned beforehand and the plans filed at the fort for the use and guidance of the commanding officer, to whom is assigned this portion of the defense. The execution of these plans may be left to the time of need. In this way the defense can probably better meet the attack and provide a flexibility of plan which has been of much value in the past. The inner line is the one with which we are more concerned in time of peace. This line should unquestionably have at least its more important salients and gun emplacements constructed beforehand. The search lights and electric power necessary for this side of the fort must be provided, and the siege guns, howitzers, rapid-fire machine guns that are decided upon as being necessary must be ready to be moved into their emplacements on short notice. This line of works should be so laid out that the operations of the high power guns can never be interfered with by a landing party unless the land line of defense is lost in an attack.

This inner line should provide a screen for the rear of the high-power gun emplacements in time of peace to prevent unauthorized inspection and should provide a safe rallying point in case of disaster to the outer land line in time of an engagement. The short, straight lines of parapet considered so essential in some of the older styles of fortification works should be sacrificed in invisibility, and shrubs and bushes should be set out to conceal their location from troops in front. These methods of concealment are simple but effective, as any one will agree who has noticed the batteries of the English at Hongkong, many of which may be seen with glasses from the deck of an incoming ship, and compared them with the works of the Japanese at Nagasaki and Yokohama where outside of the island forts the batteries are very difficult to discern.

## INTRODUCTORY REMARKS UPON THE NEW TACTICS.

By COLONEL JAMES REGAN, U. S. A.

NINTH INFANTRY.



TACTICS is simply the art of disposing and arranging the military units of organizations and maneuvering them on the drill ground and later on the field of battle without confusion, using the formations most advantageous and in harmony with the circumstances. The following principles of tactics never lose their pertinency: 1st, strength; 2nd, activity, which produces celerity; 3rd, universal mobility, according to the character of the ground, against all species of assailants, to give the most effective use to the three arms. These three principles, which have, in detail, taken volumes to explain, and which Napoleon used so effectively, are thus stated by Jomini: "1, The union of forces; 2, the guarding of weak points; 3, the seizing with rapidity the most important points." They are beset with numerous and physical complications, but are as applicable to-day as they were when Napoleon had all Europe at his feet. These principles are closely studied by Europeans in their fall maneuvers of the three arms. While we have had but few opportunities in the past in this direction, we are now getting off the drill ground and expanding. Later this subject will be again referred to.

No one can be a master of tactics, minor and grand, without possessing a thorough knowledge of the effects of modern weapons, used offensively and defensively.

A laudable effort has been made to keep up with the advance of these inventive days. The Springfield breech-loader was perfect in its class, and it was a long time before its friends would acknowledge the superiority of the present magazine rifle.

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Officers should acquaint themselves with the relative merits of our rifles and those of the principal foreign countries. For example, compare our own rifle, the Krag, with the Martini-Metford, the Lee-Metford, the Mauser, the Mannlicher,

the Lebel, etc., as to caliber, weight of ball, number of grooves, system, rounds, sight, weight of cartridge, velocity and penetration. It is claimed for the new rifles that stockades of 12-inch baulks are perforated with ease, even at extreme ranges; that 20 inches of oak are perforated at 200 yards; that banks of earth 2 feet thick are no longer proof against them; and that an 18-inch wall can be pierced through and through.

After all is said, pro and con, much of the superiority of the magazine system lies in its rapidity of fire and its proper direction at the critical moment, which in war are very important factors, as was shown by the rapid-fire: 1. In the attack on the Height of Chlum. In this affair the Prussians in advancing profited by the folds of the ground and smoke of battle, and when quite near the entrenchments they decimated almost in an instant, the ranks of the Austrians, clearly showing the effect of the then new needle gun. 2. At Podol, in the same war, where the proportion of killed and wounded was as one to eight against the latter, the Austrians, with their inferior rifles. The difference in rifles gave the Prussians the effect of a force three times as large as their actual effectiveness. 3. At the battle of Rezonville, in 1870, the superiority of the chassepot was tactically neutralized by the superiority of the German steel cannon. The affair at Podol is an example of the want of fire discipline, because after an action of four hours 3000 Austrians, entrenched and sheltered, inflicted a loss of only 130 killed. The Germans showed excellent fire discipline.

While we know that every officer is expected to have a theoretical and practical knowledge of the three arms, he is very fortunate to be skilled in his own arm. Still, Holmes tells us that "the duties of each arm of the service blend into one another, and the higher the grade an officer attains, the more requisite it is that he should be acquainted generally with those arms of the service to which he himself does not belong; by these means alone can we hope to obtain that intelligent co-operation, that harmonious working of all branches of the service together which makes a perfect machine out of the various elements composing an army, and at the same time gives the surest guarantee of success."

The last great wars in Europe have clearly proved the fact that an attack of infantry will stand no chance of success if the artillery has not previously rendered the action of the

enemy's battery powerless and broken up the cohesion of its infantry. As an illustration, let us take the German idea at the battle of Coulmier, which was to hold the enemy under cover until the artillery had done its work, by breaking down its works and dismounting their guns, and then to throw into confusion the opposing infantry by formidable discharge of canister, by which means the way was cleared for the assault. The front and flank ranks were generally combined. This battle showed the superiority of artillery at the short range not merely in number of guns, but also in caliber and precision.

The machine, a semi-infantry gun, kept up a terrible clatter on San Juan Hill, and sustained its reputation of firing about 400 shots per minute per gun. Had every shot told, the whole Spanish army would have been annihilated; but it has been clearly established that its efficiency is restricted on account of the difficulty of correcting its aim. It will play an important part, however, in defensive positions. Boguslawski, in remarking upon guns of this kind styles them hybrids, and considers them very inferior engines of war.

The Silesian War is the starting-point of modern tactical maneuvers, and all line tactics date properly from the Seven Years' War. The ancients had their solid masses for shock action alone. Jomini, in referring to the improvements in armament in this day, stated that while it did not change the principles of strategy, it had a marked effect upon organization and tactics.

Tactical questions are still unsettled. In Germany and Great Britain we have still, at least until recently, advocates for close order. Boguslawski is for extended order, or as it is called, organized disorder.

The object of all tactical dispositions is to inflict as much loss on the enemy as possible, while avoiding as far as possible the return fire of the enemy. "We must put as many men in the front rank as possible, irrespective of loss, as can use their rifles with effect." The recent inventions in arms and powder have borne, and will bear a very important part in future wars. The smokeless powder, we might say, has completely displaced the black or cocoa powder on account of its high velocity for a given chamber pressure, the latter being thoroughly out of date in the new order of things.

In battle there is something awfully mysterious about

smokeless powder. Just before the battle of San Juan Hill we could hear the fire of musketry on all sides and over our heads, apparently from the trees and from every bush, without knowing from where they came or seeing the enemy. They were anxious moments, as men were being hit on different parts of the road and numerously at the crossing of the river. By Maude and others, however, it is claimed that the flashing of smokeless powder from every conceivable background marks the line of the enemy quite as distinctly as the puffs of the old black powder. Maude, in commenting on this subject in his valuable papers, states that "soldiers filled with determination to kill, and to keep on killing, the absence of the smoke cloud can only be welcomed," and further, that "two armies will not pass the day in firing at each other from a distance; one or the other must advance to the attack."

The Germans in the war of 1870, because of the inferiority of their rifles, showed marked skill in fire discipline, while the French with their superior rifles, chassepot, showed quite the reverse. The Germans advanced to within 500 or 600 yards of the French, at which range they would deliver aimed fire. This is remarkable when we take into account that the French rifle had a range of 2000 yards and could be fired twice as fast as the German rifle. The trouble with the French was that they wasted their ammunition at the long ranges.

It may prove of interest here to cite a few cases of fire control in the battles of 1877 between the Russians and the Turks: 1. In the Krishen redoubt the Turks were allowed in their assaults to approach within 400 yards of the Russian lines and, notwithstanding that the Turks held their ground manfully, in the end they were driven back in confusion. 2. Near Sophia the Russians, about 3500 strong, occupied the crest of a low hill, or bluff, and notwithstanding that the Turks were 5000 in number, the Russians with their admirable firmness allowed the Turks to approach to within 100 paces, when with well-aimed volleys they broke them up, terminating the affair with bayonets. The Turks left 800 on the field and carried off 1600 of their wounded. This was repeated later near the village of Dermadere, with nearly the same results to the Turks, the Russians losing only 60 in all. 3. At Shenovo the Russians moved forward to the assault of the redoubts with bands playing without wavering or firing a shot, and at the proper time broke into a run and captured the works, this notwith-



standing they were losing heavily all the time. These examples refute in a measure the assertion of Maude that it is impracticable to make infantry advance under fire without the encouragement of their own fire. Unquestionably to do it successfully requires the discipline of the Germans or the Russians. Maude claims, however, that the firing ought not to commence one moment before it can be avoided. This moment is to be determined by the officers when by the enemy's fire it becomes necessary to advance by rushes.

In considering this last point it is well to take into account the fact that a skirmisher can fire three times as far and at the same rate in rapidity and correctness than he could formerly. It is asserted that infantry fire must be multiplied by four or by six in comparison with what it was as recent as 1870, due to the superior training of the officers and men; and that while the long-range firing of 1870 and 1877 was wild, now it is the best controlled of all kinds of fire, and that in the campaigns of 1859 to 1877, inclusive, superiority in weapons played an important part, but now nations are equal in this particular. Hence the necessity of being abreast with the best tactics and organizations of the day, and if we expect to be arbiters on this continent, they must command our most urgent attention.

The wars which have taken place within the last forty years, including the recent one in Boerland, have demonstrated the necessity of extension of lines, but when we come to consider this more in detail it will be seen that this extension must be delayed as long as possible, or until the fire becomes intense. We have shown what good troops can do in this direction, but we do not need to go abroad for examples, because our regulars at San Juan and at El Caney demonstrated what good troops can do even in a frontal attack. We have also repeated examples of this in the later stages of the Civil War.

On account of the rapid-fire guns the supply of ammunition on the battle-field is of the greatest importance, and recognizing this fact, we have no well-defined system in this country. During our recent affairs ammunition was carried to points near the trenches on the backs of mules, and then by means of rude hand-barrows. The Germans, who are up in everything, and who do not wait until war begins, have an excellent system, which the Americans might copy with great advantage.



The Turks must have had a fine system in the war of 1877, because ammunition was supplied to their skirmishers without limit, as many as 500 shells having been found by the side of dead Turks. While the battle is on we cannot have too much ammunition. Whole regiments at the battle of Shiloh were compelled to retire to renew their ammunition. Little dependence is to be placed upon being supplied from the rear; therefore every opportunity should be utilized before the action begins to serve out ammunition, to be carried by the men in their belts, pockets and haversacks.

From what we know of war and from what has been stated in this paper, it will be perceived that fire discipline is of paramount importance to get the best results, especially on the defensive. The Germans give it the greatest attention, and they rely upon it to overcome man's inherent fear of death and danger. When men can be halted under fire, drilled and maneuvered, it is discipline of the highest order—the oft-repeated idea, “the man behind the gun.” The Germans in the war of 1870, and the Russians later in 1877 advanced well within effective range, secured their positions and held them. But we must keep in mind, in this connection, that a perpetual and constant supply of ammunition is necessary to the life of infantry, and this can only be obtained by teaching steadiness, careful practice and economy in the use of ammunition—principles, Boguslawski says, opposed to long-range shooting.

It is claimed that smokeless powder, rapidity of fire and increased range and penetration will not materially change the tactics of small bodies of infantry. The supports and reserves, however, of the larger units upon the offensive will require greater attention for their protection on account of the absence of smoke from their fire. The successful execution of the infantry attack will depend upon superiority of numbers and fire within effective range of the enemy. Study recent wars to see how this can be done to the best effect. But this is no new principle, as Napoleon gives an illustration of it in nearly every battle he fought. This matter may be further touched upon in considering dispersed order.

It is interesting to note in reading up on the late wars how the improvement in armament compelled a change in tactics. In the Franco-German War the compact formation used in the initial fights gave way to the dispersed order, and later, based

upon their own experience and that of the Germans, the traditional shock action of the Russians had to be greatly modified, so that in the end the dispersed order was almost wholly used. The Prussian company column superseded the deeper columns of the battalions. The English have always been sticklers for the mass formations, but from their recent experiences in the Transvaal, those ideas will be modified. The folly of the dense order inopportunately used was illustrated by the Austrians in 1859 in their impetuous assaults in platoons closed in mass against the extended lines of the Prussians.

The tactics of to-day, with its firing line, supports and reserves, are even more necessary now than they were in Napoleon's time. The shock, or blow, in mass should by its effectiveness and superiority be such as to drive the enemy from his position. The fire line is merely a screen and the rear lines under its protection should be up in time to give the decisive blow.

The last great wars give us many important lessons, and upon them our recent tactics are based. They are: 1. A thorough preparation by the artillery, the troops in the meantime taking their places, if necessary, by forced marches, to be in time for the decisive blow, flanking the enemy's wing when possible.

2. Turning to account the accidents of the ground, which, to do well, requires great practical experience and ability to judge the terrain after careful reconnaissance before and during the battle.

3. Taking advantage of cover and the skilful use of the same, especially while gaining ground to the front while under the protection of our own artillery, and while thus engaged never turning back until the enemy is driven from his position in confusion or vanquished. The possession of numerous points of shelter is of considerable advantage.

4. The independence of chiefs of small squads, with the necessary discretion to direct their own troops, in a word, giving them the initiative.

While it is claimed that the attack formation need not be radically modified, still the improvements in armament necessitate the fire line to be moved farther to the rear. It is claimed on account of the absence of the screen of smoke that the enemy's fire will not be seriously felt until within 500 or 600 yards of his firing line; closer than this the attacking force

will be in a trying and dangerous position. Under the old conditions 300 yards marked the boundary of the fire-swept zone. To anticipate a little, by our present tactics the lines in advancing assume the combat formation when within effective artillery range, about 2500 yards, first opening out, offering little depth to prevent loss at long range, then thickening at about 800 yards from the enemy. From now on the firing line is more or less re-enforced to within 500 yards of the enemy's position—in fact, all the component parts of the line join the advance line at this distance. The movement forward from this on is rapid and vigorous, the lines and masses in the rear closing up so as to give their support at the critical moment, which should be timed with greatest exactitude. Of course the troops during the advance protect themselves by the irregularities and folds of the ground, or by shelter trenches. This, however, should not be abused, because if there is too much concealment decisive results cannot be obtained.

It is during this forward movement, when every man's mind is at the highest tension, that previous training and fire discipline tell. This is the time that each soldier must handle his weapon with certainty and rapidity; that he obey promptly all orders; that he observe the enemy without losing sight of him; that he remain calm during the enemy's fire, even though he be not allowed to respond to the same; and that he cease immediately at the signal or command. The men ought to be taught how to fire when behind a protection or parapet. If this is not closely watched, the men, especially the young soldiers, are apt to place their gun on the inner crest and fire at a high angle. I noticed this frequently while we were in the trenches on San Juan. If these rules are properly inculcated, the troops will reach the decisive range, 600 yards or less, without much loss of ammunition. They are so vital to success that every officer and non-commissioned officer should give them the strictest attention, the latter, who are in direct touch with the men, seeing that the men understand the object desired; that they aim well; that they make use of the terrain; and that they promptly obey orders and commands.

In closing this paper attention is called to a few determined facts affecting the three arms:

1. The Artillery. The tactical advantage of smokeless powder on this arm, it is claimed, will be greater than with infantry, as the absence of smoke leaves a clear field and the

infantry and cavalry cannot steal in and surprise it. The other advantages claimed for the artillery are: that the effects of fire can easily be observed at short and long ranges, and the battery commander can see and make himself heard; that positions can be more easily selected, and direct, flank and tier fire can be used with the guns closer together, and in consequence of the absence of smoke, the gun will more than ever open the way for the rifle.

The disadvantages claimed are: That guns cannot approach as close as formerly in the final stage of the attack; that the gunners will be more easily picked off, while the effect of artillery on extended infantry will be nil; that it will be more difficult to conceal timbers, wagons, teams, etc., thereby impairing mobility and movement of batteries which may be obviated by earthworks. Batteries on the move are not easily hit.

2. The Cavalry. This arm, it is claimed, has become valueless on the field of battle, because the horse, unlike the gun, does not improve. It has not, however, lost its technical value in speed, in surprise, in flank and in rear attacks. It is worthless against broken infantry, and it must keep farther back. (*Sic.*)\*


Greene, in his "Russian Campaigns," says, "that if the points of attack are well observed, the troops properly distributed, the advance made in reasonable open order, in successive lines, and the attack simultaneous and in superior numbers, upon decisive points, the assault will reach the parapet in spite of the breech-loaders, and the strongest parties will win as they did at Kikopolis, at Shenovo, at Kars and at Five Forks." Von Sherff claims, however, that the new arm is equal to the demands upon it, the frequent momentous results of its fire being well established. The improvements in armament will unquestionably exact stricter discipline, greater bravery, better instruction and more skilful leadership. Let our tactics of battle, therefore, be resolute, energetic and full of the spirit of the initiative.

\*[See also *Reprints*, "German Ideas, etc.," and *Comment and Criticism*. —Ed.]

## IMPROVEMENT OF THE SUBSISTENCE SERVICE IN THE GREAT ARMIES.

BY LIEUT. ROGALLA V. BIEBERSTEIN.

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N all branches of army service the army authorities are striving to increase the readiness to strike and the ability to wage war with the armies under their care. Latterly especial attention has been directed to the subsistence service. For a long while experiments of an exhaustive scientific nature have been going on in the German and other armies over the rational methods of feeding soldiers in the field, over the worth and influence of preserved and fresh meat, sugar, fat, and albumen (in egg zwieback, etc.) on the soldier equipped and actively in the field. Certain food-stuff principles have been reached which agree substantially in all armies. But it does not suffice to determine the most fitting and strongest food-stuffs for the soldier in the field and undergoing the exactions of field service, such as maneuvers, etc., but it is a question to-day more than formerly, on account of the greater physical expenditure demanded, of the best preparations possible, and the early service of them to the troops immediately after the efforts of a field day in maneuver or war.

The use of masses of troops, such as the conduct of war to-day or even the maneuvers of armies comprising four corps call for, has noticeably increased the demands upon the marching and fighting ability of troops. Such cases were the long marches of last year in the Emperor's maneuvers, those in Austria, the Russian maneuvers in Esthland and Kursk, and the French army maneuvers. All the more important is it, therefore, after the men have arrived in bivouac or camp, tired out, to avoid tiring them more by long waits and further expenditure of strength, but rather to put them as soon as possible in condition for further action.

Properly we hold fast that the marching and fighting soldier must always be in position to prepare himself a meal in his cooking utensil with the subsistence he carries in that

utensil, and further, that in this regard until the renewal of this lunch portion, or of the three-day canned supply, he must be wholly independent of the army train. Especially for those arms of the service which are constantly occupying advance posts, the infantry and cavalry, are cooking utensils wholly indispensable, and only the artillery and the train use a general mess-apparatus for their daily messing; the train retains cooking utensils for special cases, such as litter-bearers and hospital attendants. These general mess-tools consist of three nesting kettles, thus taking but little room, which are transported on the troop wagons easily, and can be quickly set up. They have the advantage that with them a better tasting meal can be quickly furnished the men with little effort. The kettles, with the necessary ladles, are carried on the wagons and calculated one per gun. And since batteries of field artillery in the rare cases in which the bivouacs are all together (the same is true of train columns and detachments) the preparation of their meals in the general mess utensils is possible, while this is not possible for the infantry and cavalry on advance posts, save partially in the advance post support and pickets. On account of the numerous cases in which this occurs, the cavalry has for a number of years carried a large copper kettle for each squadron. In later times the infantry, in order to be able to provide a quick, toothsome meal with ease, has carried on the baggage wagon a large, but not sufficiently so, cooking kettle. In many infantry organizations, however, this is forbidden, because it is desired that the soldier learn to cook in his own utensil. As desirable as this is, and weighty as it may be in war, it does not exclude the use of larger, more practical cooking tools for troops that ride or drive.

In the maneuvers of 1901, as we understand, there was tried in certain organizations, a new cooking apparatus whose use aimed at the immediate supply of warm meals in bivouac and camp, and to spare the men from tiresome, time-robbing cooking after march and fight. This messing apparatus consisted of a simple solid wooden chest, provided with iron corner pieces and handles. It was lined inside on all sides with felt padding 20 c. m. thick. In this chest a freshly cooked meal in its kettle was placed. The padded cover is then hermetically sealed, and the cooked food is supposed to retain its hot, enjoyable condition from 24 to 36 hours, so that, on entering



bivouac or camp, warm food can be had at once. A number of large ladles in the chest serve for rapid distribution of the food. Apparently there lies at the bottom of this idea the "Swedish cooking chest," which is stamped out of pressed hay. In this the dish containing the food to be cooked is placed in "an uncooked state, and within ten hours the food is cooked through the self-heating of the hay." The new cooking apparatus before mentioned weighs only 150 pounds, and is calculated for a company, squadron or battery. But it can be easily transported only on the wagons of the mounted arms, since the wagons of the infantry have every place taken by necessary things. With this arm, therefore, new wagons or modifications of the old will be necessary to enable this apparatus to be taken everywhere into the field. Should this occur, the introduction of the Russian soup wagon, advocated later in this article, would be unnecessary.

The preparation of food in quantity can be carried on by cooks, and thus save the troops from the drudgery of cooking, providing, moreover, more acceptable food. Thus in the summer of 1901, in the Guards Corps, in the maneuvers at Tehdenick, as well as in other army corps in earlier cases, the cooking of food in quantity for the troops occurred particularly before the departure of the troops from the maneuver ground for garrison. In the case of the Guards Corps there were concentrated 4,000 men in bivouac at Tehdenick. Their food was prepared in three hours in twelve great field kettles, each of 350 liters capacity. These meals consisted of crisped cabbage, beef and potatoes, beans with beef and potatoes, and bacon and peas, according to choice of the troops. Each man received 125 gr. of meat and 1 liter of this nutritious, strong, and toothsome food. In the same way dinner for 150 officers was prepared. In one hour the men's dinner was distributed and eaten. For similar preparations of food in quantity in cases of mobilizations and in the field, field ovens might be used which, consisting of kettles, their appurtenances and the tools to erect them, could be used on the march of the army to the supply stations of the camps, and later at points where many troops are assembled, requiring but 24 hours for their erection. In such field ovens, erected by the subsistence officials during the Emperor's maneuvers, there were furnished, in order to refresh the men, tea cooked and placed in great barrels and basins as also distilled water obtained in a special



apparatus. Each man received a liter per day. The cold tea thus distributed gave good results, and the same results ensued from experiments with lemon-sugar made into lemonade by heating in kettles. Both furnished refreshment that contributed to renewal of strength. A special innovation in providing an army was the "water service" instituted by the sanitary officers in the Emperor's maneuvers. Its object was to furnish the largest subdivisions in all positions with a plentiful supply of drinking water, and thus to protect them from contagion and sickness. This was supplemented by a preliminary, exact classification of the water ingredients and a corresponding table on poles and posters of the springs and waters that were to be used. Manifestly such care for the water supply could not be had in war of steady advancing—only in long camps, such as sieges, etc., where low ground with waters of organic elements existed. And even in advances it seems reasonably imperative that in bivouac and temporary shelters the troops' surgeons turn their attention to the water conditions more than formerly, and investigate far enough to exclude all suspicious springs and waters.

In the French army the custom obtains at the maneuvers during a short—say, half hour—halt, to prepare coffee and a light soup. In the effort to quickly furnish the tired men with a meal they have there gone to the extreme of using preserved food in boxes with a spirit lamp of such a kind that each box without any further preparation, furnishes a warm meal anywhere after lighting the spirit. This method has been tested with us only to a limited extent, but has been much used by officers. In general we prefer fresh food material, because it is stronger and because the canned is usually on hand three years. Preserved foods have, moreover, the weighty objection that they taste flat and insipid, and that meat is without its full strength, and the enjoyment of it is not to be compared with that of fresh meat. But preserved meat offers the great advantage that, either cold or warmed, it can be eaten far sooner than the fresh meat and greens cooked in the cooking utensil.

In quite another way than those mentioned a special arrangement of the Russian army fulfils the task of preparing at once a strong midday meal for the troops, after a march or fight, in bivouac or temporary shelter. This is the Russian field cooking wagon. The first impression which the apparatus

makes as a part of the equipment of an army is that it constitutes a great impediment, a ballast, a luxury which makes the troops dependent upon it and robs them of their independence, while at the same time it materially adds to the army train. But upon closer inspection these disadvantages are shown to be insignificant in comparison with the advantages. More than this, other armies have had these wagons for several decades, notably the Swiss, in the cavalry, artillery and train.

In the Russian army the field cooking wagon is present in different types, no normal model having been settled upon. Each company receives one, and the troops are prepared to utilize them for trial purposes. The wagon consists of a large iron kettle set upon the axle of a light wagon. The forward part of the two-wheeled wagon has a driver's seat and a receptacle for utensils. The top of the kettle is closed by a double-hinged cover, and the kettle is provided with a safety valve and fastened by screws. Under the kettle is placed a fire-pot whose door opens to the rear, while a two or three foot pipe disposes of smoke and secures draught. The particular form of the wagon is not of significance. Experience and experiment will soon give the best model for the needs of troops in different climates. The utility of the apparatus is beyond question, and when one considers the great improvement in the welfare of troops guaranteed by its use, it seems surprising not only that this simple and cheap tool was not before provided, but also that it has not been adopted by other great armies (preserving, however, their present cooking utensils), since it had been introduced in the Russian army. In the Russian army canned goods are hardly ever used. Cattle are driven on the march and killed as required. Before starting on the march the cooks fill the kettle with water and put in the meat and vegetables. About two hours before the troops reach bivouac the fire is kindled and the midday meal begins to cook, consisting of strong soup and cooked meat. It is ready on entering bivouac. This can be repeated twice a day when necessary.

When one considers the state of the English army in South Africa and pictures the condition of the men as they arrived in camp after long marches, only to experience long weary waiting in dark and stormy nights until the evening meal, owing to the scarcity of wood in South Africa, was finally

cooked—only when we are able to deny that the use of field cooking wagons would have added to the comfort and health of those men. The use of the cooking wagons calls for a considerable increase of the train, but this may possibly be outweighed by the independence which every company obtains by carrying upon a single wagon its supply of food, its food receptacle and its wood supply. The wood supply for an iron hearth is far less than for a fire on the ground, or in a ditch. The strongest objections that can be raised against the cooking wagon may be that it lengthens the train, detracts from its power of fighting, and that when such a wagon, through a broken axle, etc., had misfortune, becomes useless, or falls into the enemy's hands, or is by him rendered worthless, the troops concerned are put in great straits. In such a case these troops would have recourse to their three-day canned supply, and could use their cooking utensils. Further, the cooking wagons might not follow small, widely separated detachments, such as platoons of cavalry or infantry, but as a rule remain behind with the company or squadron. But these objections are not weighty, for the increase of the train by four two-wheeled cars per battalion, does not seem sufficiently important to forego the great advantages to be obtained in the quick refreshment and reanimation of the men on arrival in bivouac, temporary shelter, or camp. Men arriving tired in bivouac and finding a "bite" in the cooking wagon are saved thereby the whole tiresome work of preparing a meal.

For the German army on a war footing, if every company, squadron and battery, excluding foot artillery and train companies, were to receive a field cooking wagon and each were to have a service of one sub-officer and two men, there would occur a need for an increase of about 7,000 wagons and 1,400 horses, numbers that cannot fall heavily where the total call for horses is some hundred thousand and for wagons some dozens of thousands. And the train of an infantry division would thereby be lengthened only about 700 paces. The loss of 21,000 combatants could be two-thirds avoided by using young men of the "Landsturm" not fit for service with the colors, or some of the conditionally suitable men of the reserve. It is self-evident that the cooking tools of the men and their three to four day canned supply could under no circumstances be dispensed with; so that the men, in case any accident befall the cooking wagon, could not be in distress, and further, that

widely detached troops of less than company strength may be independent of the cooking wagon. Further, most all the troops in maneuver, where to-day they have, as a rule, four bivouacs, as well as in the garrison exercises, cook in their utensils in the field at least three times in order that the men may thoroughly learn and practically carry out methods of cooking. In all other cases, however, and chiefly in war, would the use of the cooking wagon be in place to insure for the troops a saving of strength and speedy rehabilitation, qualities which in the days of decisive fighting determine its energetic execution. At this stage of the case, however, there arises the question whether or not the Russian field cooking wagon proves superior to the corresponding features of the equipment now found in the great European armies. Horses for such wagons in peace times during maneuvers, could be obtained by hiring, possibly by partial withdrawal of the horses of the train battalions, and in case of mobilization through the authorized increase.

In the Austrian army they are taken to poorly supplied rendezvous, field ovens which with great kettles are transported on wagons and set up in clay, and lately they have been experimenting with improved zwieback and preserved bread. The apparatus there used is reported in volume 7, 1902, p. 367, of this magazine.\*

To provide the bread ration the army authorities of Germany, France, and Italy, have recently introduced transportable field bake-ovens which obviate the necessity of building an oven at each place, and which are independent of soil and weather conditions. In Austria, also, such ovens are being introduced. They were used in maneuvers at Joslin, in 1900, and were further tried in the maneuvers in Tünfkireken and Böhmiji-Mikoljac in 1901. Here there was given to an infantry division a section of field ovens which satisfied the total bread requirements during the maneuvers. The fitness of the field oven for field work had been demonstrated; in 1901 it was a question of proving its fitness for operations—that is, to settle questions as to its disposition and management under difficult conditions. While with the former built-up ovens there could with great effort be had nine heatings of the oven in 24 hours, with the portable field oven this number was raised to 28 or 30. One heating took, therefore, about 45 minutes, and the results

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achieved were threefold. The baking capacity of the field oven at a single baking is less than that of the old oven (60 loaves for two bakings as against 62 to 73 for the Payer oven) because it cannot be separated from the wagon and must therefore be of lighter weight. But this is of no importance, for, if a section of 16 of the former field ovens, under pressure, could produce 20,000 rations of bread in 24 hours, 16 of the portable ovens are in position to prepare without hurry 53,500 rations in the same time. The result of this extraordinary capacity will be that fewer bake-ovens could constitute a section or be assigned to an infantry division and yet more bread be available. After the new field ovens are tried on all kinds of of carriages and baking-management with oven loaded or unloaded is thoroughly practiced, easy and rapid results are guaranteed and transportation in all places will be possible. In this way there arises the great advantage that the cavalry divisions in the future can be provided with portable ovens. Up to this time they have been compelled to make bread where they could. And since the field ovens will be able to follow the cavalry into the territory of exploration, they will be able, at the proper time, to satisfy their needs from flour taken with them. A further advantage consists in this, that the last heating can be shut in and the march can be at once begun, while the baking is completed *en route*. We learn from the proceedings of the national assembly (Austria) that out of an estimated amount of 27 million crowns for these supplies, for the first time the amount of 150,000 crowns was asked and granted without debate (for ovens?) The army authorities hope, however, that later more funds will be voted for the purpose in question; for otherwise, if the yearly amounts are not increased, eighteen years must elapse before all the ovens considered necessary, can be had.

In the Austrian maneuvers of 1902 all the measures determined on were such that the disposition and use of the troops were not hindered by any reference to subsistence. Subsistence followed just as in war. Each man carried one day's subsistence and a two day's reserve supply also, a ration of zweiback, meat, soup and coffee preserves. To replenish the daily subsistence there followed the provision wagons of the troops, the provision columns of the divisions and corps. The earlier instituted trials of the Sparbar field cooking kettle were continued. For this purpose six battalions were equipped

with eight kettles. Each kettle was borne by a man and permitted the preparation of a meal for 60 men. The field baking ovens of the Bekesy-Weiss system which had been used in the maneuvers of 1901 followed this year the 47th infantry division. For improvement of the drinking water, all the troops were provided with citric acid, and the division sanitary institutions with a Berkfeld pump-filter.

For our army there was introduced in the Emperor's maneuvers of 1902 an innovation and notable advance in the subsistence service. It consisted in the forming for the first time of the provision columns. For some years the train-battalions have been taking part in the maneuvers of their army corps; they furnished, however, only the horses and drivers of the ammunition and medicine carts of the infantry, and of the wagons of some special formations.

In the year 1902, there took part in the maneuvers not less than ten train battalions—from the Guard Corps, the 1st, 2d, 3d, 4th, 5th, 6th, 10th, 11th, and 12th Army Corps, and the subsistence followed on, just as under war conditions. One can see how great will be the demand upon the provision columns in future wars, since for a peace maneuver of eight divisions nearly one-half of the peace strength of the trains must be assembled. And even then not all the assembled troops obtained complete train formations. On the other hand one of the two provision columns which were assembled for each division was constructed of rented wagons to which only the necessary train superintendence was assigned. Both columns of the two cavalry divisions were formed of hired wagons. One of the two columns, loaded, always followed its division, while the other was reloading at the magazines that had been erected at different points within the maneuvering territory, and which with the field bakeries were in operation as early as the first of September. For four-fifths of the troop strength, the subsistence requirements were carried in the columns, while one-fifth, as when in garrison, was assumed to be on hand. The train provision columns, carried dry food, including meat, salt, grain (without hay or straw) and firewood for the numerous bivouacs. Further, the newly formed field baking columns, with their baking material were more prominent than formerly, and the bakers of the reserves were called out early enough so that they could be thoroughly instructed by the garrison bakers in the use of the



field ovens. The bakery columns—another advance in the war-subsistence service—were increased by three per army corps, and then consisted of 12 four-horse bakery wagons each, in which, while on the march, the bread for the troops was baked in about two hours. There are also two two-horse supply wagons. Its new oven material, system Payer, is constructed completely of iron, of a flat shape, and proved itself very practical in the maneuvers: afterwards also the military magazine authorities who tried it in Lüben during the summer, reached the same results. In each oven there can be baked at the same time 60 three-pound or 90 two-pound loaves. And since the baking time of the new oven lasts only  $1\frac{1}{2}$  hours, with five such ovens under continuous use, a whole division could be sufficiently provided. These ovens must now come into general use. All columns and the accompanying baggage, which in former years had been in charge of the train-personnel, was in each division put under a train battalion staff; the battalion commander was chief of the columns and baggage and possessed the disciplinary powers of a regimental commander. The line of columns of the troops was kept as free as possible of the columns and baggage and signs indicated the most suitable roads for the latter. The picture that resulted was different from the one formerly presented of infuriated authorities in endless caravans, making all roads impassable, and yet often not arriving in time at the place where they were waited for longingly. "Now it goes," reports an old observer of maneuvers, "like clock-work"; as arranged on the parade ground stand the wagons, in the first rows the provision wagons of the train, farther back the hired country wagons loaded with straw, which wagons, under professional military direction, assume a wholly military appearance. Indeed, his majesty the Emperor, in his criticism at Markendorf, should have expressly observed that he laid special emphasis on the ability of the provision detachments. The supply method took into account the conditions of warfare assumed, and the proportional small subsistence supplies offered by the country. It was subsistence by means of magazines, and since the men bivouacked mainly, each man carried his day's ration and the necessary cooking wood in his cooking utensil and knapsack, and thus was (although somewhat weighted by the fire-wood) in position to cook his food at once upon entering bivouac. Wood for bonfires and straw followed in the columns of country wagons.



For preserves the new meat preserves (Taner-Rüping), in patent packages, was used at the suggestion of the War Ministry. They had already been tried on the Emperor's table on board H. M. S. *Hohenzollern*, as also on the table of Field-Marshal Count von Waldersee in Peking, in the messes of the German naval and marine service, and in the government messes in the German colonies. These conserves are surrounded with a tasteless, odorless, mineral fat, whose melting point is not under 70 C. A second covering consists of a gelatinous skin of a chocolate brown color. This double protecting mantle, it is claimed, makes the meat thus covered insensible to all external agents.

For the water supply there were also comprehensive precautions taken in the latest Emperor's maneuvers. Not only were wagons with water-barrels called for from the villages used at headquarters, but for the Guard division. Berlin sprinkling wagons were requisitional, and were used to furnish the necessary drinking water during pauses for assembling or resting and in bivouac. In addition, at every cross-roads stood signs indicating the next springs and drinking places. Another novelty consisted of wooden troughs, erected where water was abundant, arranged for 70 to 90 horses. Great posters on the trees designated the drinkable and undrinkable waters, while by means of the outline sketches of the locality which were distributed among the troops they were able to grasp the water conditions. Where necessary, Abyssinian springs were established, and bicyclists hurried ahead to have water ready in the villages. The before-mentioned sprinkling wagons served exclusively to furnish the troops with water from such wells as had previously been examined and found available by the military surgeons. The frequent cases of dysentery and typhoid fever occurring in maneuvers could, in most cases, be traced back to drinking impure waters, which are often to be found in low land. The attempt to provide the troops with good water proved so satisfactory that it is now in view to form water-wagon columns in future maneuvers and other large assemblies of troops.

Of interest appears the judgment which an English professional observer of the maneuver formed upon the provision and wagon columns. "The hired wagon and provision columns," said he, "constitute two innovations in this year's maneuvers. Yet the country wagons make no special impres-

sion at first sight. One must admit that on their own ground and in good weather they work well. The train detachments of the provision columns have plenty of wagons and they therefore avoided the usual failing of overloading. Loaded as they were it seems that Germany possesses for home use a train all in readiness; but for the future, when they might have to use a great part of it in a long field campaign, one must be skeptical. It is hired for a day (in the field, as we know, for a whole campaign), and to all appearances it was well taken care of by the train officers commanding. The fact that every hired driver has served his time as a soldier naturally lightens the duty with the private wagon columns greatly, and the train officials move out with a personnel trained in military usages and customs. The system of supply parks is further developed in the new supply columns which move in conformity with the casual changes of direction of the tactical units to which they belong. The personnel and the train of these columns consists self-evidently of men of the regular service only. It seems too early to discuss as to its effects the innovation of a purely experimental character, by means of which the Germans hope to transform their whole present system of provision supply. It seems destined, if it is to be fruitful of results, to become like our regimental train which the English army service corps conducts and mans. The Germans, however, seem satisfied with their innovation."

The provision columns and the columns of private wagons were effective in maintaining under war conditions a reserve of commissaries and in replenishing it. The receipt of the commissaries from the provision wagons on time and the timely replacement of them by supplies from the private wagon columns and in turn their replenishing from the field magazines, as well as the proper disposition of the different columns in time and place, so as not to hinder the movement of the troops, were the problems whose skilful overcoming was incumbent upon the commissary and commanding authorities, and which were especially instructive for both. As significant as it may become, even under conditions approximating the war state, it arises from the above that every mobile army corps possesses six provision columns, seven private wagon columns and henceforth three field bakery columns. Of these each of the first consists of 27 four-horse or 36 two-horse provision wagons of 1,000 and 710 k.g. loading weight respectively, one four-

horse reserve wagon and a field forge, with a personnel of 2 officers, 2 officials, 97 men and 141 horses; consequently the provision columns alone consist of 162 to 210 provision wagons, 12 other wagons, 24 officers and officials, 402 men and 846 horses. On the other hand the private wagon columns comprise 60 two-horse wagons. This makes a total of 420 wagons and 840 horses. The field bakery columns comprise the wagons already mentioned. The timely bringing up of the provision columns to the troops, the proper sequence of the private wagon columns, their return and reloading, and their proper (not too close nor too distant) separation from the troops, the tactical regard for narrow paths, etc., furnished tasks worthy of solution to the authorities and provided in their solution much instruction for the train officials and the troops. Regarding this innovation in the field of subsistence, as well as the other details already discussed relating to the subject, it is unmistakable that an advance has been made in this branch of war technique, especially in Germany, Austria, and Russia.



## OUR NEW FIRING REGULATIONS—THE SIGHTING DRILLS.

BY LIEUT.-COLONEL CHARLES J. CRANE, EIGHTH INFANTRY.



HOW many of us carry out honestly, faithfully, and *cheerfully* the prescribed method of instruction in sighting, with the rifle, tripod, and sand-bag, taxing chiefly the ability of the man with the small disk to locate the spot where the man at the tripod imagines his rifle to be properly aimed?

The new Firing Regulations practically follows the old scheme, which the writer long ago protested against, after trial of same, to the extent of personally adopting another method in the instruction of the enlisted men of his own company, and which he still believes to be the better of the two methods.

It is believed that the entire object of the instructions in this drill should be to teach the soldier how to properly aim his rifle, he always knowing whether or not it is properly aimed and always able to promptly locate and describe any deviation from a perfect aim, and it is therefore believed that the time spent in making a soldier move a disk along the face of a wall at the command of another soldier attempting to thus fix the point aimed at, and afterward in trying to shorten sides of the triangle, indicating the soldier's irregularity in aiming, is not employed to the best advantage.

Such instructions seem more intended to make a soldier aim uniformly than to teach him how to aim correctly; how the sights, target, etc., should appear to him when the piece is properly aimed.

The following method was used by the writer for many years while a company officer, and his answer then to every criticism of the method, as not being authorized by the prescribed text-book, was to point to the results obtained by him in the instruction of his company in the use of the rifle.

One month of preliminary drill immediately preceding the annual target firing has been the rule, practice, and regulation for many years in our army.

This month has always been devoted to teaching the soldier how to use the sights of his rifle, by means of tripod, sand-bag, etc., and to make him hold his piece correctly, aim, and pull trigger properly, all through much drill in the exercises, now called "position," "aiming," and "trigger-pull exercises."

In addition to these were added at posts in the far north some gallery practice.

The drill in these exercises has been generally one hour in length.

The writer's custom was to begin each day's drill with the position, aiming, and trigger-pull exercises, dwelling with much emphasis on the performance of such exercises "without the numbers." For the first one or two drills, perhaps, the tripods and sand-bags were not used, but in the third drill they were employed, and they were used more and more as the month drew to a close, until finally, only about twenty minutes' daily drill was allowed the trigger-pull exercise, in the different positions, "without the numbers."

In these exercises care was taken to have rear sights raised, and different elevations used, and the effect of canting the piece to the right or left was explained by hasty diagrams showing how the rear sight was lowered by canting the piece to either side, thereby lowering also the point to be hit in actual firing.

The writer is firmly convinced that only one combination of sights should be taught to a recruit, viz.: the half sight, which is the only sight that can be uniformly taken by any man, and is easiest taught, and is used with most reliable results. Therefore the squad instructors were forbidden to say anything about the existence of a "fine sight," or a "full," or "coarse sight."

Each day, when beginning the exercises with the tripod, sand-bag, etc., those who had ever been sharpshooters were dismissed, after having had the other exercises strengthening their muscles, and after a few days those who were marksmen the previous year were also dismissed before beginning the tripod, etc., drill, thus leaving only the poor shots of the company to receive daily the entire instruction in the sighting drills, with tripod, sand-bag, etc. By a liberal construction of the regulations, in the preceding description there is no violation of the same. But in the following method of using

the rifle, tripod, sand-bag, etc., we will see no use made of a second man with a disk, or of a triangle of points, hits, etc., as described in our Firing Regulations for the past fifteen years or more.

There were five or six tripods, sand-bags, and instructors facing the inevitable wall or board fence twenty or thirty feet away. On this wall or board fence at regulation height there were fastened five or six diminished targets, those used for gallery practice.

The use of only the half-sight was again impressed upon all, also the necessity of not canting the piece to the right or left. The men present were assigned to the different instructors, and assembled around their own tripods respectively.

The instructors began by correctly sighting their respective pieces at their own bull's-eyes with lowered sights, the bull's-eye resting squarely on top of the front sight, and the front sight being exactly in the middle of the rear sight, the two sights forming the most accurate "half-sight" practicable.

Carefully each instructor explained to his own squad that he had his piece correctly aimed; he explained the requirements of a correct aim, where to aim, and how to aim, and then had each man examine the piece, sights, aim, etc. Then by a light touch on the butt of the rifle this correct aim was destroyed, and in each squad a soldier is ordered to aim the piece exactly as it had been aimed by the instructor.

When thus aimed, the others at that tripod are called, one by one, and asked in the presence of all what part of target would be hit, high, low, etc.

Then the instructor very carefully uses the sights, and having explained where the point hit should be, according to the sight taken, defining the defects, etc., again has the men examine the sights. He then correctly aims the piece, and again has each man examine, and again the piece is moved, and another soldier is required to correctly sight the piece. This method is repeated till all can correctly sight and aim a piece from a tripod and sand-bag, and then the instructor purposely sights the piece at some point on the target, high, low, to the right or left, and requires each man of his squad to examine the sights, and describe the point aimed at, etc. After all have thus expressed themselves the instructor explains how the piece is aimed, where the

point hit should be, and has the aim re-examined by those who had been mistaken in their description.

The men are now required in turn to sight the piece at some given point off the bull's-eye, further testing their knowledge how to sight the rifle, and tell where the point hit should be. Each soldier examines the work of the others of the squad.

Then the sights are arranged for the different elevations, and the soldier thus carefully instructed how to read these elevations properly, and to correctly use them. And the month is thus consumed, the entire time of instruction being varied as much as possible, but that part of it devoted to the use of tripod, sand-bag, etc., having for its object to instruct the soldier how to correctly use the sights, and no effort is made to ascertain what sort of an angle would result from joining by straight lines the points aimed at in three consecutive trials.

The use of a second man with a disk, and the triangle scheme, seems to the writer to constitute a roundabout, indirect method of instruction, and he doubts its efficacy when rigidly followed, and he believes that the best results have obtained where company commanders have inclined more toward the method explained in this paper, in which the writer relied upon insisting upon the use of a half-sight, with continual effort to make the soldier sight the piece so as to always show equal amount of daylight on both sides of front sight, and with bull's-eye resting squarely on front sight.

This was, and is, considered a correct sighting of the piece, and the writer consumed no time, and additional men, in using the disk method to ascertain whether or not the soldier aimed uniformly, and perhaps always incorrectly.

It is also believed to be a mistake to allow poor shots to use any other than the "half-sight."

Good shots need no sighting drill, and poor shots should be taught only that method which they can understand best, and which can easiest be taught them.

There are so many good points in our new Firing Regulations that the writer believes he is justified in selecting for notice only that part which to him seems not as good as it should be.

SAN JUAN, P. R., July 18, 1904.



## A RETROSPECT AND PROSPECT OF WAR.

BY MAJOR AUGUSTUS P. BLOCKSOM, FIRST CAVALRY.



OUR soldiers who went to the Philippines after the first shock of conflict with the natives was over, found themselves in an unusual situation. As a rule their ideas concerning proper treatment of enemies were based on General Orders No. 100 of 1863, and other standard authorities, but many of them did not fully understand the meaning of some of the most important precepts, comparatively few having practical knowledge of the sterner features and necessities of war. The many listened with indignation to tales of harsh and cruel treatment of natives, and intended when their turn came "to spare the unarmed citizen in person, property and honor as much as the exigencies of war would admit," but long before the end were doing it in a way they had at first cried down.

It did not take long to learn that conditions were strange and difficult, and that the majority of so called cases of cruelty to natives were not viciously cruel or retributive punishments, but practical business applications of the doctrine that the end justifies the means or of the fact that necessity knows no law. These applications were the water cure and kindred methods of obtaining military information. It is useless to deny that they were in vogue among regulars and volunteers during a large part of the Philippine war.

Before passing judgment let us confront the problems they were compelled to solve with regard to a perplexing country and peculiar people, and thus get at their reasons for practising the cure; then let us make plain the cure itself, its physical and mental effect on the patient, its effect upon the insurrection, and its status under the laws of war.

In their physical aspect the Philippine Islands are all similar and presented to our invading forces the most difficult of military problems in the matter of health, maintenance and logistics. That part of the archipelago which was the theater of operations is nearly a thousand miles long and averages nearly two hundred in width. Luzon contains

more than forty-seven thousand square miles of territory, and Mindanao more than thirty-six thousand. Between the two are eight smaller islands, with a total area of nearly twenty-six thousand. Innumerable others still smaller were used by insurgents as hiding places, points of supply, etc. High mountains and dense forests in all make many of the inhabited districts almost inaccessible to each other. The total population is about 8,000,000. We never had 70,000 effective soldiers in the islands at one time, and the average was much less. For a long time our means of communication and transport, between the different islands were few, and the number of naval patrols insufficient.

There are two seasons, wet and dry, both warm. The former is, on the whole, productive of more toil, discomfort and disease in an active campaign. It continues nearly half the year, and one who has never been in the tropics cannot imagine the number and density of the rainfalls.

During the first wet season of the insurrection, which was very long and steady, a large part of the country became covered with water, and it was difficult for troops to go a mile in any direction from any point without a guide. Their knowledge of local topography frequently gave the insurgents great advantage over our men while the latter were passing through swamps, rice fields, etc. Numbers of them, leg weary and exhausted, after wading and fighting for hours, would be disabled by comparatively slight wounds from the rifles of invisible Filipinos and drowned in three feet of water. On the farther side of the swamps and rice fields, the enemy would probably be found in force fronting the only avenue of easy approach. The problem was then to rush their position or flank it, the latter alternative being generally chosen by experienced officers, although it usually caused much hard labor, swimming with clothes and accoutrements, climbing big bluffs, cutting trails through thick brush, etc., keeping always on the lookout for bolo thrusts and other savage methods of attack.

The insurgents nearly always retired by the roughest way; the soldiers wearily followed up steep hills, down deep ravines, over dangerous streams, huge fallen trees, etc. After the day's work was over, many insurgents, or rather guerillas, would return to their shacks, minus rifles and uniforms (if perchance they ever wore the latter), "amigos" ready to

swear eternal friendship. The Filipino is naturally very indolent, but during the insurrection his persistence and ingenuity equalled that of an Apache on the war path.

The clothes of the officers and men were sometimes wet for a month without chance of change; they slept cold at night, often without shelter, and their rest was disturbed by venomous mosquitoes, tropical insects and reptiles. They would frequently start on a scout with three or four days rations, all they could carry, be diverted from their course by unforeseen circumstances and compelled to forage on a strange and insufficient food-bearing country for ten days or more before reaching another commissary. They generally drank disease-breeding water, not having time to boil it while chasing the enemy. Guard duty, especially at night, was hard and hazardous, with only a day or two between tours, if troops were lucky enough to be in sufficient number to provide such an interval of comparative rest. Not seldom men died from wounds because it was impossible in these wilds to get them early to the shelter and attendance of hospitals. Thus it continued for weeks and months.

The work in the dry season was as unbroken and almost as difficult and wearing, especially during the intense heat of late spring and early summer. Strength of will kept many on their feet, although many died of privation and disease or became invalids for life. In all this there was little romance or pomp and circumstance of war. The amount of face-to-face fighting did not compare with that of the Civil War, but was a welcome relief to the great strain.

Of course, a large part of the privation, toil and delay came from the extraordinary difficulties in the way of transportation met with in such a country and such a grievous climate. In the early days of the insurrection, much dependence was placed on the carabao or water buffalo, an animal of great strength, but sluggish movement. He hauled a cart carrying comparatively little on account of its heavy body, heavy wheels and narrow tires; whenever practicable, the cart was replaced by a sled in wet weather. Carabaos and native ponies were also used as pack animals and Chinese and natives employed as burden-bearers, whenever possible. On account of their small feet, both team and pack mules, moved with great difficulty through the muddy bottom of bad roads and worse trails. Several years of insurrection

against the Spanish had made many of the roads impassible to army wagons, and vast labor was required to make them at all fit. Steam transportation by water was insufficient and native boats of all kinds and qualities were used to carry troops and supplies; they were often floated for miles over land ordinarily above water. There was only one line of railroad, about one hundred and twenty miles long, in northern Luzon; it was there that the insurrection was first quelled.

The transportation and supply departments thus kept going to the best of their ability, but for a long time every chance seemed to be against them. After better roads were built between the most important points, and more transportation obtained from the United States, the problem became easier.

With regard to the general character of the Filipinos, they are apt and imitative, and the young especially have an intense desire to learn, being capable of great moral and mental improvement.

The American school teachers now in the islands are doing good work, although it may be a generation before its effect can be seen. Admitting the possibility of autonomy, our methods are more nearly right than any others in the East, not excepting the British; but the moral capacity of the Oriental mind is hard to fathom. Railroads are much needed to bring about real civilization and prosperity; in the important districts of Luzon and other large islands they would pay financially almost from the beginning and act as a sure preventive of any widespread insurrection.

Filipinos are mainly of Malay origin. They have long been a servile people and are as full of duplicity as the average Oriental. During the high tide of insurrection no reliance could be placed upon the word or will of any one, high or low, in the supposed non-combatant class. Nearly all hated Americans, and even the few who might have been well disposed if let alone, were afraid of death or destruction of property by their own people if they showed sympathy with our cause. According to the Filipino Code, it was right to pretend friendship and to betray at the first opportunity: the *amigo* apparently most loyal was most deserving of suspicion. In villages where troops were quartered it was always unsafe to go out alone or unarmed, and we were always on guard against wholesale massacre. The most brutal treatment of our men

after capture came from natives to whom they had been especially kind and forbearing.

The pretended non-combatants would seize favorable opportunities, discovered while in peaceful, friendly proximity, take the field and engineer and ambush against us; their work accomplished, they would return and renew with vehemence protestations of goodwill. Among soldiers the word "amigo" became synonymous with false and treacherous friend, and included every Filipino not actually caught with arms in his hands.

These characteristics were all learned after much doubting, bitter experience, and convinced both officers and men that we were fighting a people who had no knowledge of or respect for the laws of war, and who laughed at us because we did not practice treachery and cruelty. It is only just to say that when peace came an American soldier was practically free from molestation, even in the remote provinces.

After the insurgents ceased to fight openly in large bodies, the paid scout and spy system was not sufficient to guide expeditions to the many hostile strongholds, or to give trustworthy information as to the habits and location of the numerous Filipino generals and amigos who were furnishing brains and sinews of war to the insurrection. Guides were in a measure impressed and sometimes gave valuable information, but more often pretended ignorance, or led our soldiers away from the desired points, and, if opportunity was favorable, into ambush.

I have faintly described the difficulties due to country, climate and peculiar warfare: of course, they are well known to Army people, and the average reader should remember something about them from what he read in the papers at the time the struggle was going on. It finally became plain that unless all available methods were used and more success obtained, privation and toil, disease and death, and the vicious hostility of a considerable part of the press at home, crying for the end, might continue for years to be the portion of faithful soldiers too far away to properly represent their hard and perilous situation. Thus they fell into the sin of the water cure, an inheritance from the Spanish.

There were various methods of applying the cure: its very preparation was made so impressive that further proceedings were often unnecessary. It must be remembered

that the so-called patients were generally natives lately engaged in active hostilities, or detected in actions that left no doubt of their immediate intimate connection with insurgents. No serious mistakes were made, as during the large part of the insurrection the amigos were all guerillas or war traitors, as before intimated.

If necessary to proceed to the actual cure, the patient was ducked in a pool of water or stretched on the ground, and water poured down his throat in a constant stream until, impelled by loss of breath and distension of stomach, he gave signs of yielding. It cannot be pretended that he was gently treated, but care was taken to keep within the danger line, an officer or non-commissioned officer superintending the operation.

Another practice was this: a party of suspected amigos or insurgent prisoners, being deaf to persuasion, a detail of the guard would take one of them to tall grass and stand him up blindfolded in sight of his fellows, as if for execution. Several soldiers concealed in the grass would take hold of his legs, and when the word to fire was given, he would be thrown to the ground, a supposed corpse. His comrades would then be reinterrogated. This method was often effective and gave our men relaxation. Others rougher were rare and practiced only with natives positively known to possess guilty knowledge.

Our Government had acquired the Philippines by treaty, and was so far along the road to complete possession that no organized army was then in opposition. The constitutional definition of treason applied to the actions of most of the natives.

I quote from the able defense of Captain J. A. Ryan, 15th U. S. Cavalry: "Did my sticking the heads of these treacherous, lying native office-holders into a pail of water, thereby washing away an impediment in their speech, constitute a greater crime than treason against the flag and the soldiers who defend it? Could I have done anything else than to arrest these guilty officials?"

"Having arrested them, and knowing that the truth can be gotten from the average native only under pressure or fright, especially this being true during active insurrection, must I lay aside my sword and take up the functions of the missionary? It may be so, but to me it appeared to be an



occasion for the exercise of common sense, and that I owed duties to the members of my command and to my country, and the safety of my command could not await the tardy Commission."

The court-martial acquitted him.

I was not in the Philippines during the early and more strenuous period of the insurrection; while there I never knew a case of permanent injury resulting from the water cure, and never heard one related in numerous conversations on the subject with officers and men.

I think a large majority of those who served there prior to the end of 1901 will agree as to the substantial accuracy of the preceding statements of fact, and I am much mistaken if any real veteran, from captain down to private, who served in that period of the Civil War when guerrillas were at their worst cannot relate from his own experience instances of more cruel treatment than the water cure, administered not only to guerrillas and war traitors, but to our own men for infraction of discipline. The Civil War orders for the suppression of guerrillaism would not have been tolerated by our people if issued by commanders in the Philippines, and yet the similar situation there was worse. The principal reason for the difference is plain: the Civil War was at home.

In his severest fighting mood our average soldier is never bloodthirsty; of course, cases of cruel treatment occasionally occur in the best disciplined armies, but even retaliation allowed by the law of war against brutal treachery was rare in ours. Many of the ablest Filipinos say we were not sufficiently severe in suppressing the insurrection; that we should have been cruel to be kind in a quicker ending. When in China, officers and men of other nations laughed at us for making Boxers prisoners on the field of action.

An important thing to remember is that the only object in practising the cure was to get necessary information otherwise unobtainable, that the soldiers' action was as impersonal as their performance of any concerted military duty, and that the cure was abandoned if the patient was really ignorant or so obstinate that information could not be obtained without resorting to extreme measures, such cases being rare. The Filipinos are much like our Indians in that they respect and fear force alone; the information acquired was therefore more reliable than that otherwise obtained. The secret history



of every war, modern as well as ancient, hides methods worse than the water cure.

Many scouting parties lost in swamps and forests were saved, hundreds of Filipino generals were captured, hundreds of insurgent camps pointed out, thousands of rifles seized, and tons of incriminating documentary evidence discovered by means of the cure and other methods not differing in principle, though possibly more legal in form. It was acknowledged as a truism that the officer who did not use them rarely accomplished anything important. Had it not been for these methods and the *amigo* concentration policy, which was wise, just and humane, but likewise decried, the horrors of war would have existed much longer and millions more of treasure have been expended.

Let us look at the ethical side of the cure and see if there is any palliation for it in the laws of war. General Orders No. 100 is rightly severe against cruelty for its own sake, and says that the modern law of war no longer permits the use of violence against prisoners in order to extort desired information, or to punish them for having given false information. But it also says that all armies in the field stand in need of guides and may impress them if they cannot otherwise be obtained, and when it is clearly proved that they have misled, intentionally, these guides may be put to death. The word *impress* includes the use of force, the amount or quality of which is nowhere specified in the order, and the word *otherwise* implies that guides may be hired or persuaded; of course, the laws of war permit the use of paid spies and guides against their own people.

In the Philippines, prisoners, including *amigos* impressed for the purpose, were the best informed and often the only guides that could be found. Parties in the field seldom if ever had money to pay for them, and the prisoners themselves never voluntarily gave reliable information. In nine cases out of ten the water cure was used to get a guide.

The same order says that guerillas are not public enemies, and therefore, if captured, are not entitled to the privileges of prisoners of war, but shall be treated summarily as highway robbers and pirates; and that war traitors shall suffer death. Was not the water cure more merciful as well as more expedient when so many were guilty?

As a question of morals, which is the more evil method of

obtaining information from one's enemy, the water cure or the legal purchase of the guide and spy? The order itself in effect answers the question where it says that a citizen serving voluntarily as a guide against his own country commits treason, but that if forced to serve, he is not punishable. Can there be much difference between the water cure and any legal method of impressing or *forcing* an enemy to act as a guide?

Another paragraph reminding us of comparative ethics says that military necessity admits of deception, but disclaims acts of perfidy. A very significant one says the more vigorously wars are pursued the better it is for humanity; that sharp wars are brief.

The following paragraphs also illustrate the spirit of the order considered in connection with this subject. "To save the country is paramount to all other considerations. It is lawful to starve the hostile belligerent, armed or unarmed, so that it leads to the speedier subjection of the enemy. If the people of a country, or any portion of the same already occupied by the army, rise against it, they are violators of the laws of war and are not entitled to their protection. A commander is permitted to direct his troops to give no quarter in great straits when his own salvation makes it impossible to encumber himself with prisoners."

The order is in accord with the laws of war as laid down by the ablest writers, and cannot be impeached. Would or should a good soldier hesitate to follow such of those laws as are noted above?

The ethical conduct of every war is well illustrated in this particular: a commander requires certain effects from his subordinates in a certain time; these effects may be absolutely necessary to the success of a political plan at home or military move on the theater of war; if unsuccessful, the commander himself runs the risk of removal and disgrace, and it must be remembered that in our country, the voice of the people often calls too quickly for such removal. Does he inquire into the methods and good intentions of his subordinates? No, he has not the time; he replaces those who do not get required effects by those who will. Success is the thing; scruples often mean flat failure or belated action.

Referring to the ground I have gone over, the good intentions of our officers, indeed, of our entire army in the

Philippines, are well shown in the following lines from an article in the *JOURNAL OF THE MILITARY SERVICE INSTITUTION*.

"Who knows how often and how earnestly and honestly all these phases of our Philippine service were discussed by our officers in the Orient, and how faithfully they endeavored to work out a reasonable, successful and correct solution of the knotty problem presented to them?"

Those who complained so bitterly of the army forgot, too, that we are all made of the same clay. The larger part of the commissioned strength comes from the great middle class and the body of the rank and file comes from the middle and lower middle classes. If inspired by military training with desire to make war sharp and brief, they do not always conduct it in accord with the strictly moral point of view of the civil critic, the fault lies either in the heart of the people from whom they spring or in war itself and its written and unwritten laws. Sherman's often quoted and profane yet philosophic remark is pertinent to the question.

I have no desire to discuss the cause or justice of the Philippine war, but believe those thinkers are right who say that war in general, considered with reference to modern thought and progress, is an anachronism comparatively soon to disappear. The millennium will not then begin, however, for material expediency, rather than more slowly growing moral influences, must be the main factor to work the change, and there is always the contingency that some potent discovery in applied science may do it in a single day.

M. de Bloch's theory that a great war is now a physical impossibility may appear fanciful. He undoubtedly overestimated the growth and present extent of the chief influences that work against war and underestimated the value of those that still stand for its continuance; but he was only a century, perhaps less, ahead of his time. In this connection it may be said that the measure of truth in the opinions here expressed can in no way effect the present-day necessity for our existing and proposed means of national defense.

Recurring to moral influences, many think war will last as long as human nature, but to see that the element of personal pugnacity in nations as well as individuals is slowly disappearing, one has only to look at this much of the world's history from the remote past to the present—the intervals between wars growing longer, wars themselves growing shorter and less cruel,

the gradual tendency, internal and international, being to the displacement of brute force by the judgment of law and order.

Since the invention of gunpowder the splendid side of war has been slowly dying. So far as personal military glory is concerned, there is little of it left, due to the long range of modern arms; there is not so much living action, and men cannot distinguish themselves in the charge or in single combat as of old; fear from the invisible bullet has not its antidote.

It is true a large part of the civilized world is eager for expansion and new avenues of trade, and there is now in progress a great war, due chiefly to that cause, with signs of more to occur in the near future. It is true, too, that Europe is almost an armed camp, but the trend of affairs shows it to be a moral and physical impossibility that it shall long continue. When the people there obtain their proper voice in dictating policies of government they will do away with the personal subjection, political tension, and vast military expenditure that now keep them under the yoke. Napoleon prophesying might have better said that in *two* centuries Europe would be all Republican or all Cossack.

It will not be remarkable if we ourselves have to fight soon on account of questions arising in the Far East or South America, although the past history of the United States indicates that its constantly increasing influence will continue a powerful factor for arbitration. When war comes officers, high and low, will exert their power to keep its evils at the minimum. But public sentiment will be morally responsible for its beginning, and should without cavil let the army and navy fight it to the end, remembering that the larger the well-trained, properly equipped fighting force sent early to the scene of action, the shorter will be the war and less the liability to methods like those described in this paper. And when things go wrong, the average blame for cruelty, privation and delay should be placed where it belongs—on war itself.

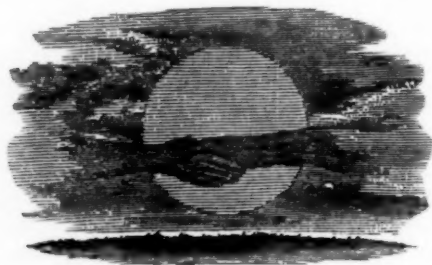
A stock argument against the possible and profitable discontinuance of war is that all wars result in intellectual stimulation, better international acquaintance, introduction of new arts, increase of trade, etc., but it is based mainly on past conditions. All its possible avenues of trade will probably be open to every nation inside the present century. Science and art are advancing with such great strides and

communication with all parts of the earth is becoming so quick and easy that liberal ideas are spreading with a rapidity never before known in history, although their unequal assimilation by different classes of society causes contention and strife in this age of transition. But the world can no longer stand still or go backward. The terrible energy of the American people certainly needs no stimulus.

The efforts of capital to hold and of labor to increase their respective shares of profit at present threaten more trouble in this country than foreign war, but it is reasonably certain that the proper mean will yet be found without an internecine struggle and that growing combinations of capital and labor, domestic and international, will ere long begin to throw their weight with greater effect against war. The business world is daily growing more provident in the matter of dropping methods that make waste.

During the time the questions now threatening war approach their final solution there should evolve a real court of arbitration, with authority to judge all serious international disputes. Straws are showing which way the wind blows. The poet's dream, "The Federation of the World," is not entirely shadowy, although it may take the form of a syndicate of five or six great nations.

This aspect of future international relations is certain to become more and more prominent. Its discussion in service journals will some day be a matter of moment. There must be many army and navy men who believe that the logic of events points to the ultimate abolition of war, and that men of their profession shall be among those who prepare the way.



## MILITARY FREE HAND SKETCHING

By FIRST LIEUT. L. McL. HAMILTON, 14TH INFANTRY.



ALTHOUGH the subject of field sketching has been covered so ably and exhaustively of late by those more capable of dealing with such a topic than myself, I feel that the importance of this work is so great that a paper upon the elements of the art will not be amiss.

The topographical features of the ground, from a military point of view, can be so readily and comprehensively shown by a simple free hand sketch, and this can be made so much more easily and quickly than the ordinary horizontal projection, that this method it would seem should find more favor with military men than appears to be the case.

However, a prevalent idea apparently exists that this form of mapping is a knack acquired with more difficulty than the former, while if anything the reverse is true; and though the writer disclaims any intention of posing as an artist, it is his purpose to exploit a few elementary methods for obtaining drawings of this description.

It is evident that sketches of the class under discussion are intended to show at a glance the relative position of the various features of the ground which is drawn, without the necessity of translating conventionalized symbols, contour lines or similar efforts; that nothing which is without military value should be included (as this simply tends to obscure and confuse, while clearness is indispensable); on the other hand, nothing should be omitted which has a military significance, and when doubtful is better put in than left out.

Features which are not shown clearly, owing to the size of the sketch, should be indicated upon the map itself as well as in the legend, shading dispensed with, and the striving for artistic effects at the expense of accuracy should not be entertained; briefly, what is needed is a *clean, clear outline*.

As a convenient way of showing the relative position of the different features in the landscape we will suppose the sketcher to be provided with a frame having a "Jacob's staff" attached, and over which cross wires are stretched

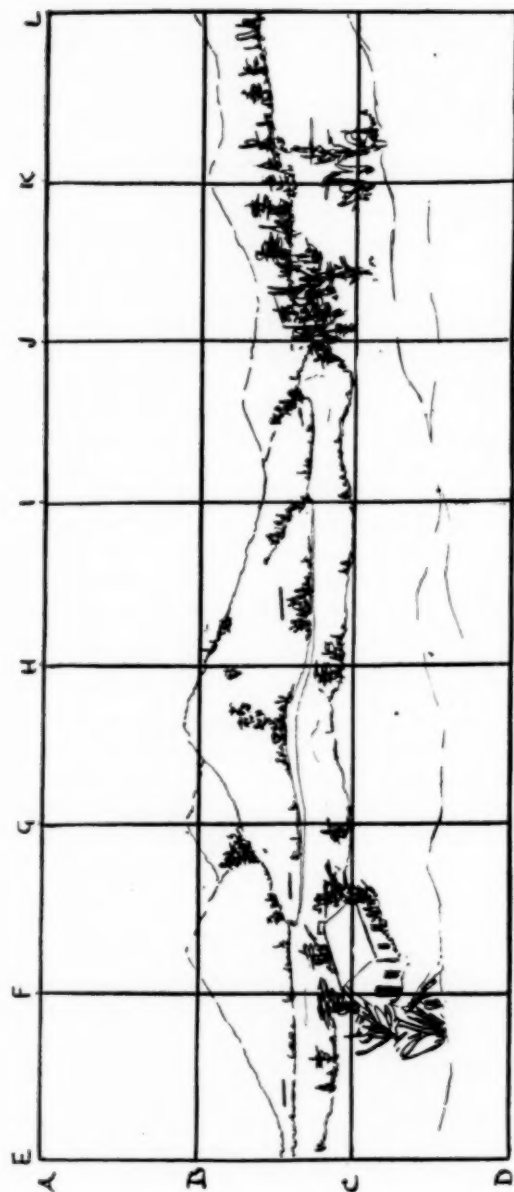


FIG. II.



(Fig. 1), also that his drawing paper be lined to represent the spaces between the lines in miniature.

This instrument is stuck in the ground by means of the staff, at a convenient distance in front of the draughtsman,

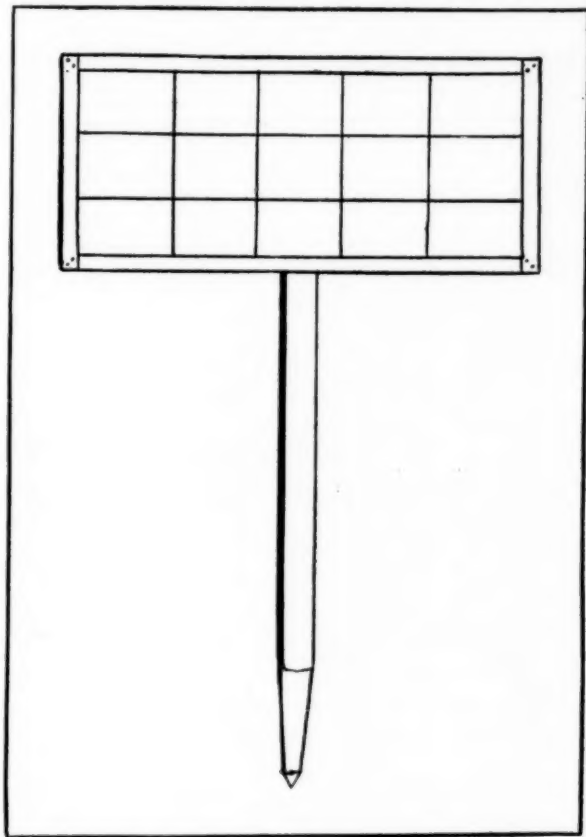


FIG. 1.

he remaining in the same relative position throughout the sketch. Upon looking at the landscape through the frame it is found that the cross wires cut it at different places; for instance, in Fig. 2 the tallest mountains are found to be a little above wire B, and the river almost following wire C, while the vertical wires, E, F, G, H, I, J, cut other positions.

Now in taking sections 1, 2, 3, 4, 5, etc., separately, one after the other, and marking on the lined paper the various positions of objects with reference to the boundaries of these sections, it is obvious that the resultant will be a close approximation to the appearance of the scape from the position drawn.

The use of this contrivance is, of course, merely a method of familiarizing oneself with the lay of the land, the relative

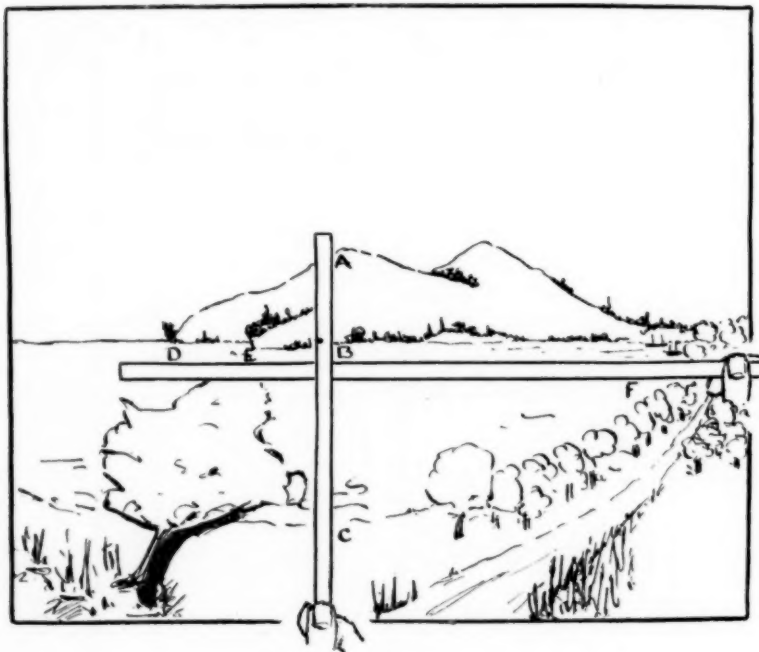


FIG. III.

size and position of objects in the scape, and when this object is attained it is not intended that its employment be continued, but the eye depended upon; and for the accomplishment of this end it will be found convenient to first draw the sky-line, next the horizon line, and finally work down to the foreground; first putting in the salient features and then those of less importance, which becoming a habit in using the frame will remain when it is discarded.

Objects which are not shown clearly should be indicated by reference marks, estimated distances noted, as well as the supposed destination of all roads.

As has been mentioned before, no attempt at shading should be made, as this does not add any value to the resulting sketch, but simply serves to obscure it; simply clean outlines are by far the best, and in practice time is often an invaluable item, while clearness is *always* indispensable.

Another method which will be found useful as a guide in aiding the eye to estimate relative values of objects in the



FIG. IV.

Time 42 seconds, from hill about 200 feet high. Distance to edge of woods,  $1\frac{1}{2}$  miles. Far road from C. .... to S. .... Near road from Shanta M to S. .... Both dirt roads, wide enough for columns of fours. Bad in wet weather. Forage, wood and water plentiful. Houses nipa.

scape, is to hold a pencil a short distance in front of the face, shut one eye and notice the position of the objects along the pencil, which may be held either vertically or horizontally, as for example, in Fig. 3, with the pencil in the vertical position the top of the island is found at A, the base at B, and the shore line at C.

In the horizontal position the end of the island is found at D, a projection presumably covering an inlet at E, and the shore at F.

It will be seen that by mentally noting the spaces these objects cut off on the pencil the sketcher is aided greatly in transferring the scape to paper; of course, the greater the distance included in the sketch, the nearer the pencil must be to the eye, and it will be found convenient to retain the same distance throughout a particular drawing.

These two methods reduce sketching to a purely mechanical operation, which is really best from a military point of view, and with a little practice with either of them the



FIG. V.

Time 30 seconds. Same point to the left. Road continuation of near road.  
Bad in wet weather. About 14 miles to island. Wooden house.  
Steam, water transportation in bay for about 1000 men.

different values become familiar and a position can be rapidly sketched with ease; go slow at first until you find that it requires no great effort and your every mark is made with confidence and boldness, then steadily increase your speed, (not at the expense of accuracy however), time yourself at each drawing, sketch the scape slowly and carefully, then dash it off at top speed and compare the two. Work for accuracy and speed; accuracy first, then speed will come of itself.

The accompanying sketches have been included to give

some idea of the type of work required and the time taken in drawing them.

The first of these, which was made in forty-two seconds, covers about seven miles, the second and third are from the same point, a hill about 200 feet high, were taken in thirty and twenty seconds respectively, combined time ninety-two seconds, which could be cut down considerably by one in practice, say to sixty seconds.

A horizontal projection of the same ground would require at least three or four days and could not be made very well



FIG. VI.

Time 20 seconds, same point to right. Road, continuation of far and near roads. Distance to top of first hill  $\frac{3}{4}$  miles. Bad road.

if the ground was in the hands of the enemy, and while the latter would give a much more minute description and the space behind eminences shown, by the nature of it it is more liable to err, especially when made while on the march or under fire; the former shows the ground as the commander of the opposing forces would see it were he on the spot and would enable him to form plans for the position before arriving there. Indeed, it would be possible for scouts to push through the enemy's line, sketching rapidly all positions of importance, which would be invaluable and could not be obtained in any other way, except of course before he occupied the ground.

## A SUGGESTED NATIONAL ORGANIZATION OF THE MILITIA.

By CHARLES SYDNEY CLARK,  
MILITARY EDITOR, N. Y. DAILY NEWS.



WHILE there are few intelligent citizens or soldiers who are not well informed regarding the army, there is a surprisingly large part of the population, including many experienced soldiers, who are entirely ignorant of the strength of the National Guard, the location of organizations of the Guard, and the comparative efficiency of the several State forces. The writer has found editors of great dailies, usually supposed to be "walking encyclopædiæ," who manifested entire ignorance of the character, efficiency or strength of "the militia," except so far as local organizations were concerned; and more than one officer of the army, detailed to inspect or instruct organizations with which the writer has been connected, has manifested the greatest astonishment upon learning facts as familiar to the guardsmen as household words.

The publication of the Militia Roster, the organization of the Inter-State and State National Guard Associations, the bringing together of the troops of several States and the army at field maneuvers, and the association of the marksmen of many States at Sea Girt, Avondale, Creedmoor, Lakeview and other rifle ranges are doing much to get the forces of the States acquainted with each other, and the army can now, from the reports of the inspectors, detailed pursuant to the Militia Bill, learn much of which they were previously unadvised. And it was full time that both soldiers and the country should be enlightened. When an administration manifests so complete a misunderstanding of the National Guard system as was exhibited in 1898, when high officers knew little if anything concerning forces sure to be under their command in war, it was high time that useful information should be disseminated.

But while many are now well informed regarding portions of the organized militia, there are comparatively few, outside of the War Department, well informed regarding the organized militia as a whole. In time the Government, taking time by

the forelock, and "preparing for war in time of peace" may organize the whole body of militia troops as an army of the reserve or second line, grouping all organizations in brigades, divisions and army corps organizations. We shall then have such a comprehensive view of the militia and its capabilities as we can not obtain to-day. Meanwhile it may interest many of us to play a game which might be described as follows:

Let each organization of the militia represent a piece upon a board representing the map of the United States. Then, so group the pieces in brigades, divisions and corps that the *present organization of the Guard shall be interfered with as little as possible*, that all the troops of each section shall be grouped in one corps, all the troops in any State in which a division or brigade has been organized shall remain in the division or brigade of that State, or an adjoining State, and that, having regard to transportation facilities, the greatest number may be massed at any danger-point in a corps district in the quickest time.

This game will not be found as easy as would appear at the first glance, and should be "approached prayerfully," as our clerical friends say. For it is entirely against the rules of the game to use the pieces as if they represented regular organizations. The guardsman has his peculiarities, is not a regular, does not want to be a regular, and can not be made a poor imitation of a regular, by statute or his own desire. He has, utterly unlike the average private or N. C. O. of the army, "a stake in the country." He has a home and a business, not in some military post, but in some town or city, and *there*, not in a military post, his interests and affections are centered. He will fight, at the drop of the hat, for his country, but it is because "the greater includes the less"; his country includes his State, and his State includes his town, and his town includes his home. He has often a wife and child to support, often a mother and sisters. In five cases out of ten he must "hustle" to get the money to help pay the indirect taxes which support the regular army. He must pay for his own lodging and subsistence. Vast business interests, vital to the welfare of the country, will in many cases suffer if he leaves his business for a great length of time.

Such a soldier, it is evident, is a very different sort of soldier from the regular. And he should not be used as a regular is. Due regard should be had for his limitations, his



State pride, sectional pride and home pride, his business interests and his family ties. No such regard was shown in 1898, and the result was deplorable. If we are to attempt to plan, on paper, an army organization for the Guard we must remember that the guardsmen are first citizens, and second soldiers. We must also remember that we are "confronted by a condition, not a theory." Nearly all who have planned an organization of the National Guard as a whole have provided in that plan for suppositious organizations, consolidating, reorganizing or disbanding present organizations, on paper, to suit the convenience of the ingenious inventor. An essay which provided for such a reorganization, published several years ago, suggested a plan which would have destroyed the National Guard in every State in the Union.

In practice such schemes are wholly impracticable. In the older States the greater part of the organizations have existed for more than a generation.\* There are, according to a well-known handbook, twenty-four militia organizations which were organized previous to 1800, and forty which were organized between 1800 and 1850. It would be a deathblow to such organizations to consolidate them with others, or deprive them of their time-honored designations. And for many of the newer regiments, batteries, and troops, the members have as strong an affection as for their homes and families.

We must therefore leave present organizations as they are, even if in doing so we form regiments of eight companies or brigades of two or four regiments. An eight-company regiment will expand in war time to a twelve-company regiment with magical speed, time expired men returning gladly to the Colors. But break up a well-known militia organization, take away its familiar name, and send the fragment to other organizations, and you cannot draw to the new organizations a corporal's guard of the old members. An illustration of this truth was found in 1898, in New York and New Jersey, in which earnest patriotic men, who were willing to fight, absolutely refused to go to the war unless under their own officers, and with a chance to secure renown for their favorite regiments.

With these introductory remarks, explaining in the schedule which follows many seeming inconsistencies, the writer will endeavor to show how the present National Guard (October,

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\*Nearly every infantry regiment in New York City has existed over fifty years, and their property is estimated to be worth \$5,500,000.

1903), could be organized as a Militia Reserve Army, in a manner satisfactory to a large part of the National Guard itself. It will be observed:

(1) Divisions are retained in States which have organized them already.

(2) Brigades are retained in States which have organized them, except in rare instances.

(3) Troops in the same "country," irrespective of State lines, are usually grouped together.

It is supposed, in all cases, that the staff of brigades shall be composed of the staff of the State or States from which the troops of the brigade come, and that each corps shall be commanded by a general officer of the army, each division by the senior general officer of the militia of that division, and each brigade by the senior general officer of the militia comprised in that brigade.

As in the National Guard there is not, as a rule, an artillery corps, a signal corps, or a hospital corps, as a separate arm of the service, in order to conform to the organization of the army, the artillery, cavalry, signal corps and hospital corps of each division are attached to headquarters to be organized as may be expedient in time of war. The figures of strength are those of the Militia Roster of October, 1903, and are an underestimate, as the National Guard increased greatly in 1903.

In some States there has been an entire reorganization since 1903, but the number of organizations remains practically the same.

#### NEW YORK MILITARY DISTRICT.

##### FIRST MILITIA RESERVE CORPS.

Headquarters, New York, N. Y.

##### FIRST DIVISION.\*

Headquarters, New York.

##### FIRST BRIGADE.

Headquarters, New York.

7th New York Infantry (10).....	New York City.
8th New York Infantry (10).....	New York City.
9th New York Infantry (10).....	New York City.

\*These are all large regiments, of long standing, which have been grouped in this or a similar manner for many years. All could be readily expanded into 12-company regiments, and it is highly desirable that the defense of New York be entrusted to one homogeneous division.

## SECOND BRIGADE.

Headquarters, New York.

12th New York Infantry (10)	New York City.
69th New York Infantry (9)	New York City.
71st New York Infantry (10)	New York City.

## THIRD BRIGADE.

Headquarters, Brooklyn.

14th New York Infantry (12)	Brooklyn.
23d New York Infantry (10)	Brooklyn.
47th New York Infantry (8)	Brooklyn.
17th Separate Company (1)	Flushing.

## DIVISIONAL ARTILLERY.

1st, 2d, and 3d Light Batteries	New York.
13th Regiment Heavy Artillery (12)	Brooklyn.

## CAVALRY.

Squadron A (3)	New York.
Troop C (1)	Brooklyn.

## ENGINEERS.

22d Regiment Engineers (10)	New York.
1st Signal Company	New York.
2d Signal Company	Brooklyn.
Hospital Corps—Regimental Sections.	

## SECOND DIVISION.

Headquarters, Albany, N. Y.

## FIRST BRIGADE.

Headquarters, Albany.

1st New York Infantry (12)	Albany.
2d New York Infantry (12)	Troy.
4th New York Battalion (6)	Watertown.
10th New York Battalion (4)	Albany.

## SECOND BRIGADE.

Headquarters, Buffalo.

65th New York Infantry (8)	Buffalo.
74th New York Infantry (8)	Buffalo.
1st New York Battalion (5)	Niagara Falls.
2d New York Battalion (4)	Geneva.
3d New York Battalion (4)	Oswego.

## THIRD BRIGADE.\*

Headquarters, New Haven.

1st Connecticut Infantry (12)	Hartford.
2d Connecticut Infantry (12)	New Haven.
3d Connecticut Infantry (12)	New London.
4th Connecticut Infantry (12)	Stamford.

\*The western part of Connecticut upon or near the Sound is practically a suburb of New York, and the greater portion of the Connecticut National Guard have business or social connection with New York City. The plain mission of the Connecticut Guard is the defense of Long Island Sound, the approach to New York, and it is inevitable in war that they should co-operate with troops to the westward, not the eastward.

DIVISIONAL ARTILLERY.

LIGHT.

6th New York Battery.....Binghamton.  
Connecticut Light Battery.....Branford.  
Connecticut Machine Gun Battery.....Hartford.

HEAVY.

Connecticut Coast Artillery (2).....New London.

CAVALRY.

Troop B.....New York.  
Troop D.....Cent. N. Y.  
Troop A, Connecticut Cavalry.....New Haven.

SIGNAL CORPS.

Connecticut Signal Corps.....4 Sections.

HOSPITAL CORPS.

Sections of the several organizations, equal to four companies.

NEW ENGLAND MILITARY DISTRICT.

THIRD DIVISION.\*

Headquarters, Boston.

FIRST BRIGADE.

Headquarters, Portland.

1st Maine Infantry (12).....Biddeford.  
2d Maine Infantry (12).....Eastport.  
1st New Hampshire Infantry (12).....Manchester.  
2d New Hampshire Infantry (12).....Concord.

SECOND BRIGADE.

Headquarters, Springfield.

1st Vermont Infantry (12).....Brattleboro.  
2d Massachusetts Infantry (12).....Springfield.  
6th Massachusetts Infantry (12).....Boston.

THIRD BRIGADE.

Headquarters, Boston.

5th Massachusetts Infantry (12).....Boston.  
8th Massachusetts Infantry (12).....Salem.  
9th Massachusetts Infantry (12).....Boston.

FOURTH BRIGADE.

Headquarters, Providence.

1st Corps Cadets Massachusetts (4).....Boston.  
2d Corps Cadets (4).....Salem.  
1st Rhode Island Infantry (8).....Providence.  
2d Rhode Island Infantry (8).....Providence.

DIVISIONAL ARTILLERY.

LIGHT.

1st Battery New Hampshire.....Manchester.  
1st Section Vermont.....Northfield.  
Batteries A, B, C, Massachusetts.....Boston.  
Rhode Island Light Battery.....Providence.  
Rhode Island Machine Gun Battery.....Providence.

\*Maine, Vermont, New Hampshire, Massachusetts and Rhode Island are the "New England" of to-day, of which the center is Boston, not New York, and all the troops of these States should be in one division, of four brigades.

## 240 NATIONAL ORGANIZATION OF MILITIA.

### HEAVY.

1st Regiment Heavy Artillery Massachusetts (12)

### CAVALRY.

Troops A-F, Massachusetts.....Boston, Chelmsford.  
Troop A, New Hampshire.....Peterboro.  
Troop D, Massachusetts.....Boston.  
1st Squadron Rhode Island Cavalry (2).....

### SIGNAL CORPS.

Maine Signal Corps.....Portland.  
Massachusetts Signal Corps (2).....Boston.  
Rhode Island Signal Corps.....Providence.

### HOSPITAL CORPS.

Maine Ambulance Co.  
Vermont Hospital Corps.  
Massachusetts Ambulance Corps.  
Rhode Island Hospital Corps.

## MIDDLE ATLANTIC MILITARY DISTRICT.

### SECOND MILITIA RESERVE CORPS.

Headquarters, Baltimore.

#### FIRST DIVISION.

Headquarters, Philadelphia.

#### FIRST BRIGADE.

Headquarters, Newark.

1st New Jersey Infantry (12).....Newark.  
4th New Jersey Infantry (12).....Jersey City.  
5th New Jersey Infantry (12).....Paterson.

#### SECOND BRIGADE.

Headquarters, Camden.

2d New Jersey Infantry (12).....Trenton.  
3d New Jersey Infantry (12).....Camden.  
1st Pennsylvania Infantry (12).....Philadelphia.

#### THIRD BRIGADE.

Headquarters, Philadelphia.

2d Pennsylvania Infantry (12).....Philadelphia.  
3d Pennsylvania Infantry (12).....Philadelphia.  
6th Pennsylvania Infantry (12).....Philadelphia.

### DIVISIONAL ARTILLERY.

#### LIGHT.

Battery A, New Jersey.....East Orange.  
Battery B, New Jersey.....Camden.

#### CAVALRY.

1st Troop Philadelphia City Cavalry.....Philadelphia.  
2d Troop Philadelphia City Cavalry.....Philadelphia.  
1st Troop New Jersey Cavalry.....East Orange.  
2d Troop New Jersey Cavalry.....Camden.

#### SIGNAL CORPS.

New Jersey Signal and Telegraph Corps....Jersey City.

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### SECOND DIVISION.

Headquarters, Harrisburg.

#### FIRST BRIGADE.

Headquarters, Pittsburg.

14th Pennsylvania Infantry (8).....Pittsburg.  
16th Pennsylvania Infantry (12).....Oil City.  
18th Pennsylvania Infantry (12).....Pittsburg.

#### SECOND BRIGADE.

Headquarters, Harrisburg.

5th Pennsylvania Infantry (8).....Lewiston.  
10th Pennsylvania Infantry (8).....Washington.  
12th Pennsylvania Infantry (10).....Sunbury.  
8th Pennsylvania Infantry (9).....Harrisburg.

#### THIRD BRIGADE.

Headquarters, Wilkesbarre.

4th Pennsylvania Infantry (10).....Allentown.  
9th Pennsylvania Infantry (12).....Wilkesbarre.  
13th Pennsylvania Infantry (11).....Scranton.

#### DIVISIONAL ARTILLERY.

Battery B.....East Pittsburg.  
Battery C.....Phoenixville.

#### CAVALRY.

Troop A.....Philadelphia.  
Sheridan Troop.....Tyrone.  
Governor's Troop.....Harrisburg.

#### SIGNAL CORPS.

None.

#### HOSPITAL CORPS.

Sections from organizations designated.

### THIRD DIVISION.

Headquarters, Washington.

#### FIRST BRIGADE.

Headquarters, Baltimore.

1st Delaware Infantry (8).....Wilmington.  
4th Maryland Infantry (12).....Baltimore.  
5th Maryland Infantry (12).....Baltimore.

#### SECOND BRIGADE.

Headquarters, Hagerstown.

1st Maryland Infantry (11).....Hagerstown.  
1st West Virginia Infantry (11).....Fairmount.  
2d West Virginia Infantry (9).....Parkersburg.

#### THIRD BRIGADE.

Headquarters, Washington.

1st District of Columbia Infantry (9).....Washington.  
2d District of Columbia Infantry (12).....Washington.  
1st Battalion District of Columbia Infantry (4). Washington.

#### DIVISIONAL ARTILLERY.

1st Battery District of Columbia.....Washington.

CAVALRY.

Troop A, Maryland ..... Baltimore.

SIGNAL CORPS.

Maryland Corps ..... Baltimore.  
 District of Columbia Corps ..... Washington.  
 West Virginia Corps ..... Charleston.

HOSPITAL CORPS.

District of Columbia Corps ..... Washington.

**SOUTHERN ATLANTIC MILITARY DISTRICT.**

**THIRD MILITIA RESERVE CORPS.**

Headquarters, Atlanta.

**FIRST DIVISION.**

Headquarters, Raleigh.

**FIRST BRIGADE.**

Headquarters, Richmond.

70th Virginia Infantry (12) ..... Richmond.  
 71st Virginia Infantry (12) ..... Norfolk.  
 Light Infantry Blues and Unattached Com-  
 panies (14) .....

**SECOND BRIGADE.**

Headquarters, Raleigh.

1st North Carolina Infantry (11) ..... Charlotte.  
 2d North Carolina Infantry (11) ..... Washington.  
 3d North Carolina Infantry (12) ..... Reidsville.

**THIRD BRIGADE.**

Headquarters, Charleston.

1st South Carolina Infantry (11) ..... Greenville.  
 2d South Carolina Infantry (11) ..... Orangeburg.  
 3d South Carolina Infantry (9) ..... Charleston.  
 Unassigned Companies (6) .....

**DIVISIONAL ARTILLERY.**

Battery A, North Carolina .....  
 German Artillery, South Carolina .....  
 1st Battalion Artillery Virginia (3) ..... Richmond.

CAVALRY.

1st Regiment South Carolina Cavalry (12) ..... Georgetown.  
 Troop B Virginia Cavalry ..... Surrey.

HOSPITAL CORPS.

North Carolina.

**SECOND DIVISION.**

Headquarters, Savannah.

**FIRST BRIGADE.**

Headquarters, Atlanta.

1st Georgia Infantry (10) ..... Savannah.  
 5th Georgia Infantry (12) ..... Atlanta.  
 3d Georgia Infantry (12) ..... Madison.



SECOND BRIGADE.

Headquarters, Macon.

4th Georgia Infantry (12).....Bainbridge.  
2d Georgia Infantry (12).....Macon.  
1st Battalion Georgia Infantry (7).....Savannah.

THIRD BRIGADE.

Headquarters, Jacksonville.

1st Florida Infantry (12).....St. Augustine.  
2d Florida Infantry (12).....Orlando.  
1st Alabama Infantry (12).....Mobile.

DIVISIONAL ARTILLERY.

Chatham Artillery.....Savannah.  
Georgia Artillery.....Savannah.  
Battalion Field Artillery (2).....Jacksonville.  
1st Battalion Heavy Artillery (4).....Savannah.

GULF MILITARY DISTRICT.

THIRD DIVISION.

Headquarters, New Orleans.

FIRST BRIGADE.

Headquarters, Montgomery.

1st Alabama Infantry (12).....Mobile.  
2d Alabama Infantry (12).....Eufala.  
3d Alabama Infantry (12).....Birmingham.

SECOND BRIGADE.

Headquarters, Jackson.

1st Mississippi Infantry (7).....West Point.  
2d Mississippi Infantry (8).....Laurel.  
3d Mississippi Infantry (7).....Monroe.

THIRD BRIGADE.

Headquarters, Helena.

1st Battalion Louisiana Infantry and 1 Sepa-  
rate Company (7).....Monroe.  
1st Arkansas Infantry (12).....Helena.  
2d Arkansas Infantry and 6 Separate Com-  
panies (12).....Little Rock.

DIVISIONAL ARTILLERY.

Alabama 1st Battalion (4).....Montgomery.  
Arkansas Battery A.....Little Rock.  
Louisiana Washington Artillery (4).....New Orleans.  
Louisiana Field Artillery (4).....New Orleans.  
Mississippi Battery E.....Vicksburg.

CAVALRY.

Alabama Squadron (4).....Camden.  
Louisiana 1st Troop.....New Orleans.  
Louisiana 2d Troop.....Mansfield.  
Louisiana 3d Troop.....Lake Charles.

SIGNAL CORPS.

Louisiana Signal Corps.....New Orleans.

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### SUMMARY STRENGTH OF ARMS OF THE DEPARTMENT OF THE EAST.

	1ST CORPS	2D CORPS	3D CORPS	TOTAL
Companies Infantry.....	345	296	307	948
Batteries, Artillery.....	39	5	25	69
Troops Cavalry.....	12	8	20	40
Companies Engineers.....	10	0	0	10
Companies Signal Corps....	6	4	1	11

### STRENGTH IN NUMBERS OFFICIAL ROSTER (INCLUDING GENERAL OFFICERS AND STAFF).

New York.....	13,869	Maine.....	1,158
Connecticut.....	2,572	New Hampshire.....	1,319
Vermont.....	701	Massachusetts.....	15,739
Rhode Island.....	1,025	New Jersey.....	4,651
Pennsylvania.....	9,068	Delaware.....	1,389
Maryland.....	2,006	West Virginia.....	1,140
District of Columbia.....	1,294	Virginia.....	2,271
North Carolina.....	1,850	South Carolina.....	13,692
Georgia.....	4,684	Arkansas.....	1,731
Florida.....	1,291	Louisiana.....	1,498
Alabama.....	3,318	Mississippi.....	1,140
Total.....			66,426

### MIDDLE WEST MILITARY DISTRICT. FOURTH MILITIA RESERVE CORPS.

Headquarters, Chicago.

#### FIRST DIVISION.

Headquarters, Columbus.

#### FIRST BRIGADE.

Headquarters, Toledo.

1st Ohio Infantry (10).....	Cincinnati.
2d Ohio Infantry (8).....	Lima.
3d Ohio Infantry (11).....	Dayton.

#### SECOND BRIGADE.

Headquarters, Columbus.

4th Ohio Infantry (11).....	Columbus.
5th Ohio Infantry (11).....	Cleveland.
7th Ohio Infantry (10).....	Ironton.

#### THIRD BRIGADE.

Headquarters, Cleveland.

6th Ohio Infantry (12).....	Toledo.
9th Ohio Battalion Infantry (4).....	Cleveland..
8th Ohio Infantry (12).....	Bucyrus.

#### DIVISIONAL ARTILLERY.

Battery A.....	Cleveland.
Battery B.....	Cincinnati.
Battery D.....	Toledo.
Battery H.....	Columbus.

#### CAVALRY.

Troop A.....	Cleveland.
Troop B.....	Columbus.

#### ENGINEERS.

Engineer Battalion (4).....	Cleveland.
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HOSPITAL CORPS.  
Sections of Organizations.

SIGNAL CORPS.  
None.

SECOND DIVISION.  
Headquarters, Indianapolis.

FIRST BRIGADE.  
Headquarters, Indianapolis.

1st Indiana Infantry (11).....Vincennes.  
2d Indiana Infantry (12).....Indianapolis.  
3d Indiana Infantry (12).....South Bend.

SECOND BRIGADE.  
Headquarters, Nashville.

1st Tennessee Infantry (11).....Nashville.  
2d Tennessee Infantry (6).....Memphis.  
3d Tennessee Infantry (12).....Greenville.  
Unattached Company (1).....Nashville.

THIRD BRIGADE.  
Headquarters, Frankfort.

2d Kentucky Infantry (6).....Lexington.  
Unassigned Companies (3).....  
3d Kentucky Infantry (11).....Bowling Green.

REMARKS—Kentucky, with a population of 2,300,000, appears to have a very small State force in proportion to its population, size and wealth. It could readily support a third regiment, and the Kentucky force should be made a separate brigade on condition it do so.

DIVISIONAL ARTILLERY.  
Indiana Batteries A, B, and C.  
Kentucky Batteries, A, B, and C.

CAVALRY.  
Tennessee Troops B and C.

SIGNAL CORPS.  
Indiana Signal Corps.

HOSPITAL CORPS.  
Sections of Organizations named.

THIRD DIVISION.  
Headquarters, Springfield.

FIRST BRIGADE.  
Headquarters, Chicago.

1st Illinois Infantry (12).....Chicago.  
2d Illinois Infantry (12).....Chicago.  
8th Illinois Infantry (12).....Chicago.

SECOND BRIGADE.  
Headquarters, Springfield.

4th Illinois Infantry (12).....Springfield.  
5th Illinois Infantry (12).....Springfield.  
3d Illinois Infantry (12).....Rockford.

## THIRD BRIGADE.

Headquarters, Chicago.

6th Illinois Infantry (12)	Chicago.
7th Illinois Infantry (12)	Chicago.
1st Illinois Cavalry (8)	Chicago.

## DIVISIONAL ARTILLERY.

Battery A	Danville.
Battery B	Galesburg.
Battery D	Chicago.

## ENGINEERS.

Engineer Company	Springfield.
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## SIGNAL CORPS.

Illinois Signal Corps	Springfield, Chicago.
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## HOSPITAL CORPS.

Illinois Hospital Corps.

## FOURTH DIVISION.

Headquarters, Lansing.

## FIRST BRIGADE.

Headquarters, Lansing.

1st Michigan Infantry (12)	Detroit.
2d Michigan Infantry (12)	Kalamazoo.
3d Michigan Infantry (11)	Sault Ste. Marie.
1st Ind. Battalion Michigan (4)	Jackson.

## SECOND BRIGADE.

Headquarters, Madison.

1st Wisconsin Infantry (12)	Milwaukee.
2d Wisconsin Infantry (12)	Appleton.
3d Wisconsin Infantry (12)	Lacrosse.
10th Separate Battalion (4)	Milwaukee.

## DIVISIONAL ARTILLERY.

Wisconsin 1st Battery	Milwaukee.
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## CAVALRY.

Wisconsin Troop A	Milwaukee.
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## SUMMARY OF FOURTH MILITIA RESERVE CORPS.

Companies of Infantry	349=87½ battalions.
Troops of Cavalry	13
Batteries of Artillery	14
Engineer Companies	3
Signal Corps Companies	3
Hospital Corps Companies	7 (Sections of Organizations)

## STRENGTH IN NUMBERS.

(Including present General Officers and Staff Officers.)

Ohio	5,677
Indiana	2,234
Tennessee	1,915
Kentucky	1,261
Illinois	6,669
Michigan	3,031
Wisconsin	2,857

Total 23,644

CENTRAL MILITARY DISTRICT.

FIFTH MILITIA RESERVE CORPS.

Headquarters, Omaha.

FIRST DIVISION.

Headquarters, St. Paul.

FIRST BRIGADE.

Headquarters, St. Paul.

1st Minnesota Infantry (9).....Minneapolis.  
2d Minnesota Infantry (9).....New Ulm.  
3d Minnesota Infantry (9).....St. Paul.

SECOND BRIGADE.

Headquarters, Bismark.

1st North Dakota Infantry (12).....Valley City.  
2d South Dakota Infantry (12).....Pierre.  
3d South Dakota Infantry (12).....Aberdeen.

THIRD BRIGADE.

Headquarters, Des Moines.

53d Iowa Infantry (12).....Des Moines.  
54th Iowa Infantry (12).....Ottumwa.  
55th Iowa Infantry (12).....Ames.

DIVISIONAL ARTILLERY.

North Dakota Battery A.....Lisbon.  
Minnesota Batteries A, B.....St. Paul.  
South Dakota, Battery A.....Huron.

CAVALRY.

North Dakota Troop A.....Dunseith.  
South Dakota 1st Squadron (3).....Deadwood.

ENGINEERS.

Minnesota Company.....St. Paul.

SIGNAL CORPS.

Iowa Company.

SECOND DIVISION.

Headquarters, St. Louis.

FIRST BRIGADE.

Headquarters, Jefferson City.

1st Missouri Infantry (10).....St. Louis.  
2d Missouri Infantry (10).....Nevada.  
3d Missouri Infantry (10).....Kansas City.  
4th Missouri Infantry (7).....St. Joseph.  
6th Missouri Infantry (5).....Cape Girardeau.

SECOND BRIGADE.

Headquarters, Topeka.

1st Kansas Infantry (12).....Lawrence.  
2d Kansas Infantry (12).....Newton.  
1st Oklahoma Infantry (12).....Guthrie.

THIRD BRIGADE.

Headquarters, Omaha.

56th Iowa Infantry (12).....Sioux City.  
1st Nebraska Infantry (12).....Broken Bow.  
2d Nebraska Infantry (12).....Fairbury.

## ARTILLERY.

Nebraska Battery A.....	Wymore.
Missouri Battery A.....	St. Louis.
Kansas 1st Battalion (2).....	Wichita.
Oklahoma 1st Battery.....	Oklahoma City.

## CAVALRY.

Nebraska Troop A.....	Seward.
South Omaha Troop.....	South Omaha.
Oklahoma Troop A.....	Guthrie.

## HOSPITAL CORPS.

Kansas Corps (2).....	Washington-Eldorado.
Nebraska Corps.....	Lincoln.
Oklahoma Corps.....	Woodward.

## SIGNAL CORPS.

Oklahoma Corps.....	Blackwell.
Nebraska Corps.....	Frémont.

**NORTHWESTERN MILITARY DISTRICT.****FIFTH MILITIA RESERVE CORPS.**

## THIRD DIVISION.

Headquarters, Portland.

## FIRST BRIGADE.

Headquarters, Denver.

1st Colorado Infantry (11).....	Denver.
2d Colorado Infantry (6).....	Pueblo.
3d Wyoming Infantry (7).....	Sheridan.

## SECOND BRIGADE.

Headquarters, Butte.

1st Montana Infantry (7).....	Bozeman.
1st Idaho Infantry (8).....	Boise.
1st Utah Infantry (6).....	Salt Lake.

## THIRD BRIGADE.

Headquarters, Portland.

2d Washington Infantry (12).....	Seattle.
3d Oregon Infantry (12).....	Portland.
1st Separate Battalion Oregon (4).....	Eugene.

## DIVISIONAL ARTILLERY.

Colorado Battery A.....	Denver.
Wyoming Battery B.....	Basin.
Montana Battery A.....	Helena.
Utah Battery A.....	Salt Lake.
Oregon 1st Battery.....	Portland.

## CAVALRY.

Wyoming Troop A.....	Cheyenne.
Utah Troop A.....	Salt Lake City.
Washington Troop B.....	Tacoma.
Oregon Troop A.....	Lebanon.

## HOSPITAL CORPS.

Colorado Hospital Corps.....	Denver.
Utah Hospital Corps.....	Salt Lake City.
Washington Hospital Corps.....	Tacoma.

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## SIGNAL CORPS.

Colorado Signal Corps.....	Denver.
Utah Signal Corps.....	Salt Lake.
Washington Signal Corps.....	Seattle.

## SUMMARY FIFTH CORPS.

Infantry Companies.....	296
Batteries Artillery.....	13
Troops Cavalry.....	11
Signal Corps Companies.....	6
Hospital Corps.....	7
Engineer Companies.....	1

## STRENGTH

(Including General Officers and Staff.)

Minnesota.....	2,026	Kansas.....	1,320
North Dakota.....	806	Oklahoma.....	874
South Dakota.....	1,335	Nebraska.....	1,588
Iowa.....	2,364	Colorado.....	1,802
Missouri.....	3,078	Wyoming.....	360
Montana.....	538	Idaho.....	449
Utah.....	376	Washington.....	822
Oregon.....	1,262	Total.....	19,000

## SOUTHWESTERN MILITARY DISTRICT.

### SIXTH MILITIA RESERVE CORPS.

Headquarters, San Francisco.

#### FIRST DIVISION.

Headquarters ———

#### FIRST BRIGADE.

Headquarters, Los Angeles.

1st New Mexico Infantry (6).....	Albuquerque.
1st Arizona Infantry (6).....	Phoenix.
7th California Infantry (12).....	Los Angeles.

#### SECOND BRIGADE.

Headquarters, San Francisco.

1st California Infantry (6).....	San Francisco.
5th California Infantry (9).....	San Francisco.
2d California Infantry (9).....	Sacramento.
6th California Infantry (9).....	Stockton.

#### THIRD BRIGADE.

Headquarters, Austin.

1st Texas Infantry (11).....	Austin.
2d Texas Infantry (12).....	Houston.
3d Texas Infantry (12).....	Corsicana.

#### DIVISIONAL ARTILLERY.

Texas 1st, 3d, 4th and C Batteries.....	Dallas.
California 1st Battalion (4).....	San Francisco.

#### CAVALRY.

New Mexico Troop A.....	Las Vegas.
Arizona 1st Troop.....	Nogales.
California Troops A, B, C, D.....	San Francisco.
Texas 1st Squadron (4).....	Houston.



## SIGNAL CORPS.

Texas Corps..... Brenham.  
 California Signal Corps (3)..... San Francisco.

## SUMMARY SIXTH CORPS, FIRST DIVISION.

Infantry Companies..... 92  
 Batteries Artillery..... 8  
 Troops Cavalry..... 10  
 Signal Corps Companies..... 10

## STRENGTH.

(Including General Officers and Staff.)

California.....	3,480	Texas.....	3,266
Arizona.....	382	New Mexico.....	371
		Total.....	7,499

## GENERAL SUMMARY.

	Infantry Co's.	Artillery Co's.	Cavalry Troops.	Engineer Co's.	Sig. Corps Co's.	Off. and men.
1st Corps.....	345	39	12	10	6	} 66,426
2d .. .. .	296	5	8	..	4	
3d .. .. .	307	25	20	..	1	
4th .. .. .	340	14	13	2	3	23,644
5th .. .. .	296	13	11	1	6	19,000
6th .. .. .	92	8	10	..	10	7,499
Total.....	1,685	104	74	13	30	116,569

12-Co. Regiments, 140 + 5 cos. 8 + 8 cos. 6 + 2 cos.



## RELATION OF THE GOVERNMENT TO A PATENT GRANTED ONE IN ITS SERVICE.

BY LIEUT. JAMES HAMILTON, U. S. ARMY, M.E., LL. B.



HERE seems to have arisen in some circles a question not only as to the propriety of officers in the military or naval service obtaining a patent for their inventions, but also as to the right of such persons to patent protection.

The words of the statute are without limitation as to the character of persons entitled to such protection. The law says: "*Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter . . . may, under certain conditions, obtain a patent therefor.*" The patentee may be man or woman, black or white, citizen or alien. A soldier or sailor may obtain a patent with equal right, and be as fully protected in his patent property, as a civilian; this is amply confirmed by the practice of the Patent Office in granting patents and of the courts in sustaining them. But those in the Government service are often so circumstanced as to require the aid of the Government in the development of their inventions; and in this article I shall try to show under what circumstances such an inventor parts with certain rights by receiving aid.

In *Solomons v. United States*, 137 U. S., 342, 346, Mr. Justice Brewer, in delivering the opinion of the court, said:

. . . The Government has no more power to appropriate a man's property invested in a patent than it has to take his property invested in real estate; nor does the mere fact that an inventor is at the time of his invention in the employ of the Government transfer to it any title to, or interest in it. An employee, performing all the duties assigned to him in his department of service, may exercise his inventive faculties in any direction he chooses, with the assurance that whatever invention he may thus conceive and perfect is his individual property. There is no difference between the government and any other employer in this respect. . . .

This language is broad enough to include those in the military and naval services, as well as those in the civil service of the Government. But language equally strong may be found in the decisions of the U. S. Supreme Court in cases involving the right of an army officer to a patent. Thus, in the

case of *United States v. Burns*, 12 Wall. 246, 252, the patent in suit was for the well-known Sibley tent. The court by Mr. Justice Field said:

If an officer in the military service, not specially employed to make experiments with a view to suggest improvements, devises a new and valuable improvement in arms, tents or any other kind of war material, he is entitled to the benefit of it and to letters-patent for the improvement, from the United States, equally with any other citizen not engaged in such service; and the Government cannot, after the patent is issued, make use of the improvement any more than a private individual, without license of the inventor or making compensation to him.

The above decisions clearly establish the right of one in the Government service to a patent for his invention, and by virtue of that patent to exclude every one, even to the Government itself, from practising the invention during the life of the patent. Let us see under what circumstances this right becomes abridged.

The leading case is *McClurg v. Kingsland*, 1 How. 202. Here one Harley, a foundryman, noticed that, when a stream of water in filling a bucket struck tangentially against its inner walls, rubbish in the bucket was drawn to the center; and from this he conceived the idea of leading molten iron, in the casting of rolls, into the mold tangentially to the walls thereof, with the result that the slag was drawn to the center. Several unsuccessful experiments were made, but finally the process and apparatus were so improved that the later experiments proved a success. All these experiments were made while Harley was in the employ of the defendants at weekly wages, and were at the expense of the defendants, who furnished the help of Harley's co-employees in conducting the experiments and money for building the necessary apparatus. After the experiments proved a success, Harley's wages were increased, and he remained in the defendant's employ for several months thereafter, during which he often spoke to them about taking out a patent and their buying his rights thereunder, which they declined to do. However, he made no demand upon them for any compensation for using his improvement, nor did he give them any notice not to use it, till, on some misunderstanding upon another subject, he gave them such notice, about the time of leaving their employ and entering that of the plaintiffs, to whom he sold his rights subsequently. It was held that Harley

by his conduct had given the defendants implied license to use his invention which license was irrevocable.

Another illustrative case is found in *Solomons v. United States*, 137 U. S. 342, in which the invention described in the patent in suit was a self-canceling revenue stamp devised by one Clark, then Chief of the Bureau of Printing and Engraving, who had assigned his rights in said patent to the plaintiff, Solomons, in payment of a long-standing account. Prior to filing his application for said patent, Clark had in his official capacity been brought into consultation with a sub-committee of the Committee on Ways and Means of the House of Representatives, and as a result of such consultation it was mutually understood that the best self-canceling stamp Clark could devise would be adopted and used by the Government. At the expense of the Government and by the employees of said bureau, a die or plate was made for the stamp embodying Clark's invention, as later patented by him. Before the final adoption of the stamp by the Commissioner of Internal Revenue, Clark stated to him that the design was his own (Clark's), but that he should make no charge to the Government therefor, as he was employed on a salary by the Government and had used its machinery and other property in the perfection of his invention. However, no express license to use the invention was ever given to the Government, nor was any notice filed prohibiting the use of the invention, or intimating the demand of a royalty therefor. Upon Clark's recommendation the commissioner adopted the perfected stamp, and after its adoption Clark applied for and obtained the patent. Upon this state of facts the Supreme Court found for the Government on the ground that the conduct of Clark in the premises gave the Government an irrevocable, implied license to use his invention. In the course of its opinion, the court said:

So, also, when one is in the employ of another in a certain line of work, and devises an improved method or instrument for doing that work, and uses the property of his employer and the services of other employees to develop and put in practicable form his invention, and explicitly assents to the use by his employer of such invention, a jury or a court trying the facts, is warranted in finding that he has so far recognized the obligations flowing from his employment and the benefits resulting from his use of the property, and the assistance of the co-employees, of his employer, as to have given to such employer an irrevocable license to use such invention.

One of the latest cases is that of *Gill v. United States*, 160 U. S. 426. Here the claimant Gill entered the employ of the

Government as machinist at the Frankford Arsenal, Pennsylvania, in 1864, and was promoted from time to time, with increase of wages, until in 1881 he held the position of master armorer. During this period he made several inventions pertaining to machines used in the manufacture of small-arms ammunition, and obtained patents therefor. It was no part of his duty to use his inventive faculties, and all his inventions were reduced to paper in the form of an intelligible drawing out of the hours of labor at the arsenal, and at his own expense. In this form they were exhibited to the commanding officer of the arsenal for his approval, and the construction of the various machines took place at the arsenal shops at the Government's expense and under the claimant's supervision, which supervision was a part of claimant's regular duty. The cost of preparing patterns for castings, and of preparing working drawings and of constructing working machines was borne exclusively by the Government; but the claimant did not use any Government property, or the services of any Government employee in making or developing or perfecting the inventions themselves. In each case one or more machines, or articles of manufacture embodying the invention, had been constructed and was in operation or use in the arsenal with the claimant's knowledge and assent before he filed an application for a patent. Upon this state of facts the court found for the Government, and in the course of its opinion said:

Now, whether the property of the Government and the services of its employees be used in the experiments necessary to develop the invention, or in the preparation of patterns and working drawings, and the construction of the completed machines is of no importance. . . . The material fact is that, in both this and the *Solomons* case, the patentee made use of the labor and property of the Government in putting his invention into the form of an operative machine, and whether such employment was in the preliminary stage of elaborating and experimenting upon the original idea, putting that idea into definite shape by patterns or working drawings, or finally embodying it in a completed machine, is of no consequence. In neither case did the patentee risk anything but the loss of his personal exertions in conceiving the invention. In both cases, there was a question whether machines made after his idea would be successful or not, and if such machines had proven to be impracticable, the loss would have fallen upon the Government.

The decision in all these cases rested upon the broad legal principle that one who looks on and assents to that which he has power to prevent is held to be precluded ever afterward

from maintaining an action for damages; such conduct creates in law what is called "an estoppel *in pais*." "In equity, therefore, where a man has been silent when in conscience he ought to have spoken he shall be debarred from speaking when conscience requires him to be silent." A familiar instance is where one stands by while a sale is being made of property in which he has an interest, and makes no claim thereto, in which he is held to be precluded from setting up such claim afterward. Clark was in Government employ and had been assigned the duty of devising a stamp in his official capacity. All experiments were in his case at the Government expense; and he did not intimate that the stamp he recommended for adoption would be patented and a royalty demanded in case use of the stamp was made in pursuance of his recommendation. Indeed, he did just the opposite—told the Commissioner of Internal Revenue that he would make no charge in case his stamp was adopted and used. While Harley was not hired to devise a new process for casting chilled iron rolls, yet all experiments were made at the expense of his employers; and many of these experiments were unsuccessful and a dead loss to them. For several months after the practicability of his new method was demonstrated, he remained in their employ and made use of it for their benefit and made no claim for royalty until he was about to leave their employ. Gill perfected his invention at his own expense and out of his regular hours of labor, and, as the court found,

the thought and time which he devoted to it were voluntarily given, as a good and earnest servant of the Government, intent on rendering more effective the work and machinery of the arsenal with which he was connected, and the work of so devising a machine was not an obligation imposed upon him by the authorities of the arsenal.

Had this been all, no estoppel would have been created, and Gill would have recovered damages. But he acquiesced in the use of his inventions by the Government and made no claim for royalty for their use. This acquiescence was held by the court to be fully shown by the following facts:

that he was in its (the Government's) employ; that the adoption by the commanding officer was procured at his suggestion; that the patterns and working drawings were prepared at the cost of the Government; that the machines embodying his inventions were also built at the expense of the Government; that he never brought his inventions before any agent of the Government as the subject of purchase and sale; that he raised no objection to the use of his

inventions by the Government; and that the commanding officer never undertook to incur a legal or pecuniary obligation on the part of the Government for the use of the inventions or the right to manufacture thereunder.

In each of these cases, therefore, there was created by his conduct, his silence and acquiescence, an estoppel against the patentee which precluded his recovering compensation for the use of his invention.

It may be remarked that in the *Solomons* case, involving the patent to Clark, Chief of the Bureau of Engraving, the decision might have been rested upon a ground other than that of estoppel *in pais*; for Clark's invention was made in discharge of an official duty assigned as a result of consultations with his official superiors. The court enunciated the following rule:

If one is employed to devise or perfect an instrument, or means for accomplishing a prescribed result, he cannot, after successfully accomplishing the work for which he was employed, plead title thereto as against his employer. That which he has been employed and paid to accomplish becomes, when accomplished, the property of his employer.

From the foregoing the following principles may be deduced:

(1) One in the Government service, civil or military, has an equal right to a patent for his invention with one not in such service.

(2) As a general rule, the Government has no more right to make use of a patented invention without making due compensation to the owner of the patent than it has to make use of any other form of property without paying for such use; and therefore the right granted by the patent to exclude others from practising the invention during the life of the patent includes within its scope the right to exclude the grantor—the Government—from that use. But this general rule is subject to the following limitations:

(a) If to one in Government service is assigned the specific duty of devising a means to supply a given want, and such duty is properly within the sphere of his employment, a license to use the means devised is implied in favor of the Government because of the relation of employer and employee existing. It may be remarked, however, that so far as army and navy officers are concerned, this limitation will have no broad application; for most of them occupy toward the Government in this respect a relation analo-



gous to that occupied by Gill, and not analogous to that of Clark.

(b) If an inventor leads the Government through its officers to believe that he assents to the free use of his invention by it; as, standing by while his invention is made use of without making claim for compensation or promptly taking steps to enforce his rights, or by leading it to expend money in providing for a test of the practicability of the invention or in developing the invention under the belief that its adoption and use by the Government is desired by the inventor and without claim for royalty upon his part; the inventor will be estopped to set up a claim for compensation for such use and an irrevocable license to use the invention will be implied in favor of the Government.

It is to be noted in the matter of the practical enforcement of an inventor's rights under his patent as against the Government, that the Government can be sued only in the manner prescribed by statute; and hence it cannot be sued as for a wrong—as by an action *ex delicto* for the infringement—but must be sued in the Court of Claims upon an action *ex contractu*—the contract being generally an implied one. Such relief has often been sought by and granted to inventors whose inventions have been made use of by the Government without their express consent.

It is plain that such relief (practically an award of damages for the wrong done) cannot compare with relief by way of injunction restraining the defendant from doing the wrong. It has just been said that the Government cannot be restrained by injunction, which is the usual remedy sought and granted in case of infringement by private persons or corporations. Can the officers of the Government be enjoined from use, unlicensed by the owner of the patent but made in their official capacity, of a patented invention embodied in property owned (or otherwise controlled, as by lease) by the Government? In *Belknap v. Schild*, 161 U. S. 10, Rear-Admiral Belknap, then commandant of Mare Island Navy Yard, was made a respondent in an equity suit in which the bill charged him with infringement in the use of a caisson-gate embodying the complainant's patented improvement in caisson-gates, and prayed that an injunction issue against the admiral to restrain the alleged wrongful use of the gate and that the gate in question be ordered destroyed.

or delivered over to the complainant. The gate was the property of the Government and had been placed in such position that it had become a part, physically, of the docks at the yard; the destruction or displacement of the gate, by order of the court, as prayed by the bill, would have seriously disturbed the general business of the yard. The Supreme Court decided that no injunction could issue against the admiral (or other public officers named as respondents in the bill) and denied the prayer for the destruction, or delivery, of the gate, holding that neither the admiral nor any other of the public officers named as respondents had an individual interest in the controversy; that the real party in interest was the Government, the owner of the property, the caisson-gate; that the Government could not be deprived of the use of its property through its officers (the only way it could use it) without first being made a party to the suit; and that, since the Government could not under the law be sued in this form of action, and thereby made a party, the prayers of the bill must be denied. This case has been followed in the recent case of *International Postal Supply Company v. Bruce*, 194 U. S. Bruce, the respondent, is postmaster at Syracuse, N. Y., and in his official capacity makes use of two stamp-canceling and post-marking machines which embody the complainant's patented improvement, and which are leased for a term from the manufacturer (himself an infringer, by his unlicensed manufacture) at an agreed rental payable by the Post-Office Department, by whose order the machines were installed at the Syracuse office. This case differed from *Belknap v. Schild* in that the Government had in the canceling-machines only the interest of a lessee in possession for a term which had not expired, while in the caisson-gate it had the interest of full ownership; and, further, in that the destruction of the gate would have seriously interfered with the work at the yard, while the enforced discontinuance of the use of the canceling machines would have resulted merely in using some less efficient device. But the court held these differences immaterial, and said that the Government as lessee of the machines had a right to use them, which could not be "interfered with behind its back" and as the Government could not be made a party to the suit, it must fail, as did that of *Belknap v. Schild*. Public officers cannot, therefore, be enjoined from the use of Government property in which is embodied a patented improvement without the consent of the

owner of the patent, and so, in infringement of his patent rights. Nor can such officers be held liable for profits derived by such use, for they do not in their individual capacity profit by the use; the profit, if any, going to the owner of the property, the Government. But they may be made to respond in damages in a suit at law; and this remedy and that against the Government by suit in the Court of Claims upon an implied contract seem to be the only ones open to a patentee against the Government, or its officers under these decisions.

It is interesting to note that in Russia the Government will grant no patent for a military invention. In Hungary, the Government may object at the proper time to the grant, which will not then be made. In most of the other principal foreign countries the right to make use of a military invention is reserved to the Government upon its paying a fair compensation, which is determined upon by agreement with the inventor, or in default of coming to such an agreement, upon a hearing of all interested before a designated office or court.

In connection with the right of an officer to a patent for his invention, it should be noted that the section of the Constitution which provides for the granting of patents is the same as that which provides for the granting of copyright protection. The object in granting both patents and copyrights is expressed to be the same—"To promote the progress of science and the useful arts." (Art. I., sec. 8). No one has yet had the hardihood to assert that an army officer is not entitled to be protected in his writings; and no good reason is to be found for denying him patent protection for his discoveries.



## THE TRAINING OF THE NON-COMMISSIONED OFFICER.

BY FIRST LIEUT. LOUIS McL. HAMILTON, 14TH INFANTRY.



UNFORTUNATELY, comparatively little attention is paid in our service to the training of non-commissioned officers, and this little, instead of being an adjunct of the military establishment at large, as in some other services, is left solely to the company commander, to the exclusion of all uniformity. While the company commander may take an interest in the education of his men, there are cases when this is not so; in any event, his time, as well as that of his men, is so taken up with other duties that little is available for educational purposes. Then again, the shortness of a soldier's term of service, and the chance of his not re-enlisting, are discouraging features.

The means employed by foreign armies to obviate these difficulties are the establishment of schools for non-commissioned officers, and the promise of a certain bonus upon re-enlistment, thus making the position of a non-commissioned officer a most desirable one, and giving him a position under the civil government, carrying with it a good salary, after a certain length of service.

Austria-Hungary gives its non-commissioned officers the following bounties upon re-enlistment:

First sergeant an increase of 17 florins\* per month.

Duty sergeants an increase of 14 florins per month,

Corporals an increase of 9.5 florins per month, which, when it is considered that their ordinary pay is only ten and a half, six, and four and a half, respectively, is quite an inducement.

Besides this they are promised employment after twelve years' service, eight of which have been served as a non-commissioned officer, or if they have been incapacitated for military duty by means of wounds received in action before the twelve years have elapsed, as inspectors in the "Kaiserlich-Königlich" bureaus, courts of justice, penal and other estab-

\*A florin is equal to 34.5 cents U. S. Currency.

lishments of the State, and as second-class superintendents and traffic employees in railroad and steamship companies which are subventioned by the State. They are also given permission to marry and provision is made by the State for their families. In some cases they are pensioned, and are frequently given special employment, perhaps in the Life Guards.

In Germany the inducements are much the same, the bounty being given, however, in two lump sums, 100 marks on re-enlistment and the following sums for the terms placed opposite them:

After 5 years.....	50 marks*
After 6 years.....	100 marks
After 7 years.....	200 marks
After 8 years.....	350 marks
After 9 years.....	550 marks
After 10 years.....	800 marks
After 11 years.....	900 marks
After 12 years.....	1000 marks

The 1,000 marks at the end of twelve years is equal to the pay of a first sergeant for 16½ months, a vice first sergeant for 22½ months, a duty sergeant for 28 months, and a corporal for 40 months. Besides which they are given the "Civil Versorgungsschein," or certificate for civil employment, which enables them to obtain a position in the postal, telegraph and railway services, or in the gendarmerie, taxes or customs.

France and Italy follow about the same methods, with the exception that the former will not re-enlist a man who was not a non-commissioned officer when discharged.

Something upon these lines could very well be done in our service with good results, especially as we now have the Philippines, where a number of resident old soldiers might at times be extremely convenient.

Having decided upon the way for obtaining the right kind of men for non-commissioned officers, let us adopt some means of educating them properly. In our service at present, the non-commissioned officer, in most cases, is made on account of his possessing that quality known as "force," which is, of course, invaluable; but it should be supplemented by a thorough knowledge of his profession, and there is no time for this in company schools. Then again, upon being made corporal, a great many non-commissioned officers become negative, and do not try to improve themselves mentally, relying

\*A mark is equal to 23.8 cents U. S. Currency.

upon their seniority in their grade to carry them through to the next grade. This could be obviated by requiring them to pass examinations, and the very fact of this obstacle in the way, would stimulate a certain amount of interest, besides guarding against the retention of unsuitable men in these positions, thus elevating the standard, and the corresponding respect commanded by them.

By this means the soldier would take interest in advancing himself in his profession, and the usual indifferent manner for which one can hardly blame him, with which he treats the continuous and never-ending recitations of drill regulations and guard duty, would disappear.

A soldier is a man with a full share of intelligence and penetration, whatever may be the opinion of some people to the contrary, and in order to use him to the greatest advantage, we must cater to his brain and hold his attention, when he will take a fresh interest in anything of which he can see the practical use; not that I mean to imply that drill regulations and guard duty are not both practical and important, but it seems to be an unfortunately common practice to confine the company's non-commissioned officers' school to these two subjects, and in time they, without doubt, become extremely wearisome.

All this could be obviated and very satisfactory results obtained by the establishing of departmental non-commissioned officers' schools, with suitable instructors detailed to teach them. Then the question of time, uniformity and proper instruction would be settled, and the result would be a set of non-commissioned officers who were thoroughly conversant with their profession. These schools should be equipped with the necessary material to give practical instruction in topography, field engineering, minor tactics, and whatever else may be thought advisable, and be fitted up modernly in every way.

Privates of whom corporals are about to be made, should be sent to one of these for a six months' course, after which they should be required to pass an examination, and given a warrant if successful.

In order to avoid giving too much time to unpromising men, they should not be permitted to go up for a second examination if the first is a failure, until one year shall have elapsed. Corporals about to be promoted to sergeants should be sent to the school for a month's course prior to an examination for that

grade, and upon failing to pass, be required to wait for one year for another.

In order to instruct the non-commissioned officers we have at present, two from each company should be sent at a time, and given a course of three months.

The following suggestions give an idea of how this time might be employed:

Hours	Mon. & Wed.	Tues. & Thurs.	Fri.	Sat.
5:30- 6:30 A.M.	Gymnasia	Gymnasia	Gymnasia	Field
6:30- 7:30 A.M.	Breakfast	Breakfast	Breakfast	Maneuvers
7:30- 8:00 A.M.	Practical com. admin	Prac. com. admin	Prac. com. admin	
8:00-10:00 A.M.	Field Engineering	Topography	Sketching	
10:00-12:00 A.M.	Minor Tactics	Study of ground	Firing Regulations	
12:00- 1:00 P.M.	Dinner	Dinner	Dinner	
1:00- 3:00 P.M.	Practical Engineering	Prac. minor. tac.	Ground study	
3:00- 5:00 P.M.	Prac. topography	War game	Prac. sketching	

Under the head of "Gymnasia" would be taught the usual course of physical training with apparatus, including parallel bars, vaulting horse, rope climbing, horizontal bars, and ladder hand climbing.

The "pactical company administration" would consist in the preparation of all papers and returns applying to the company; that is, each non-commissioned officer or candidate would be required to prepare a report every morning for the instruction company of which he was a member, besides such papers ordinarily required in the administration of a company at different intervals.

Field engineering would embrace all hasty field work, such as trenches, spar bridges, pontoons and roads.

Under "minor tactics," all the minor tactical operations applicable to a company in the field would be taken up, advance and rear guards, outposts, patrols, company in attack and defence, reports on positions, scouting in an enemy's country, and strategy.

Topography would deal with the use of the plane table, cavalry sketching case, compass, and engineer's field book scales and photography.

Elementary landscape drawing would constitute the course on sketching. This might be begun by drawing from models and continued from nature.

The study of ground would be pursued in conjunction with topography and sketching, the students being required to explain the military value of different tracts, and the manner in which they would use them for reconnoitering, attack and defence.



I believe that if the course of instruction suggested by this paper be carried out, not only will the non-commissioned officer be better fitted for his position, but he will have that assurance which comes from being thoroughly conversant with one's profession, and he will be accorded a much greater amount of respect by the file than is now the case; and with the bare chance of this being so, it is well worth trying.

In order to like one's work one must know something about it, and then if interested in it at all, the more he learns, the greater becomes the attraction and the eagerness for the acquisition of fresh information.

Certainly a school of this description would be sufficient to either interest the student or weary him; if the latter be the case, the sooner he leaves the service the better it is, both for it and himself.

The order of procedure might be summarized as follows:

The candidate is first selected by his company commander.

He is sent to school for six months.

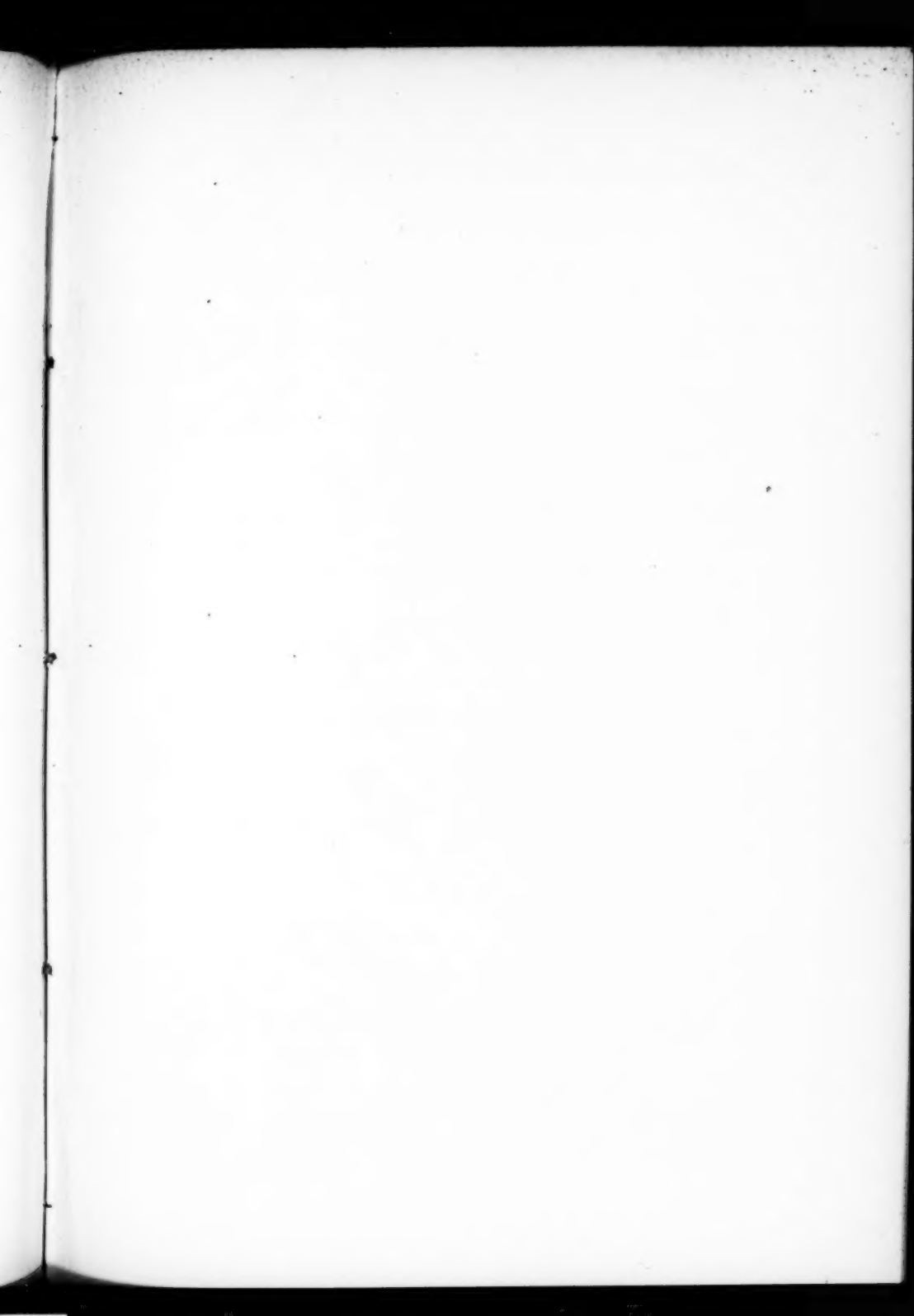
He is examined, and if found satisfactory, given a warrant as corporal.

Upon a vacancy in the sergeants, he is again sent to the school for one month, if he has been away from it for a year or more.

If he is found satisfactory, he is given a warrant as sergeant.

In this way, all the non-commissioned officers of the army will be instructed uniformly at the start, and it will not be a question as to which one, if any, can be sent to make a map, or build a bridge.







THE NEW BADGE.

AT a meeting of the Executive Council held at Governor's Island, N. Y., June 8, 1904, the following recommendations were unanimously adopted, except that the size of the medal was fixed at one and one-quarter of an inch in diameter:

#### THE GOLD AND SILVER MEDALS.

"The Committee appointed April 13, 1904, to consider and report upon the expediency of changing the form of the Gold and Silver Medals issued annually by the Military Service Institution, and recommend a substitute for said prizes in case they are won more than once by the same person, begs leave to submit the following report:

It is recommended that

I. The Resolution of Council providing for prizes of medal, money and a certificate, be amended by inserting after the word 'essay' the sentence 'Should either prize be awarded more than once to the same person, then for each award after the first, a clasp shall be awarded in place of the medal;'

II. The size of the medals be reduced to a diameter of not exceeding one and three-quarter inches;

III. That present holders of medals be permitted, if they so wish, to turn them in to the Institution, and each to receive therefor a medal, the proper number of clasps, ribbon and pin.

\* \* \* \* \*

#### THE NEW BADGE.

"The Committee appointed May 11, 1904, to consider and report upon the expediency of providing a suitable badge to be worn by Members and Associate Members of the Military Service Institution *when not in uniform*; and if approved, to submit designs for such badge at an early stated meeting of the Council" recommended "a distinctive badge in the form of a bow-knot, similar in size and form to the bow-knot ribbon of the Medal of Honor, and of such color or colors as may be selected for the new Gold Medal ribbon."

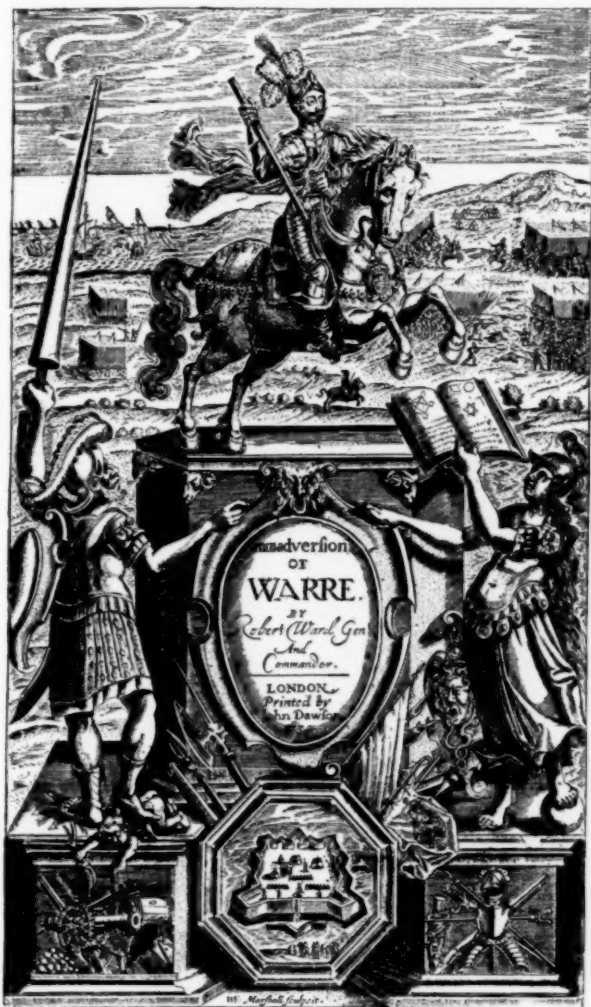
The recommendation was approved by the Council (June 8, 1904) and (July 13) the following resolution was adopted:

"*Moved*, That the Secretary be, and he is directed and authorized to cause a sufficient number of Gold and Silver Medals of the size and design approved by the Executive Council June 8, 1904, to be struck, engraved and exchanged for such of the medals already awarded, as may be returned for that purpose: and he is further instructed to procure, from time to time as required, a clasp of the design (marked 113-4) submitted by Tiffany & Co., or a plain bar of similar size, as may be required, and provide for a supply of a sufficient quantity of ribbon (design marked 113a, submitted by Tiffany & Co.), and of bow-knot (design and colors marked 362, 11, submitted by Tiffany) to be worn by members and associate members of the Institution."

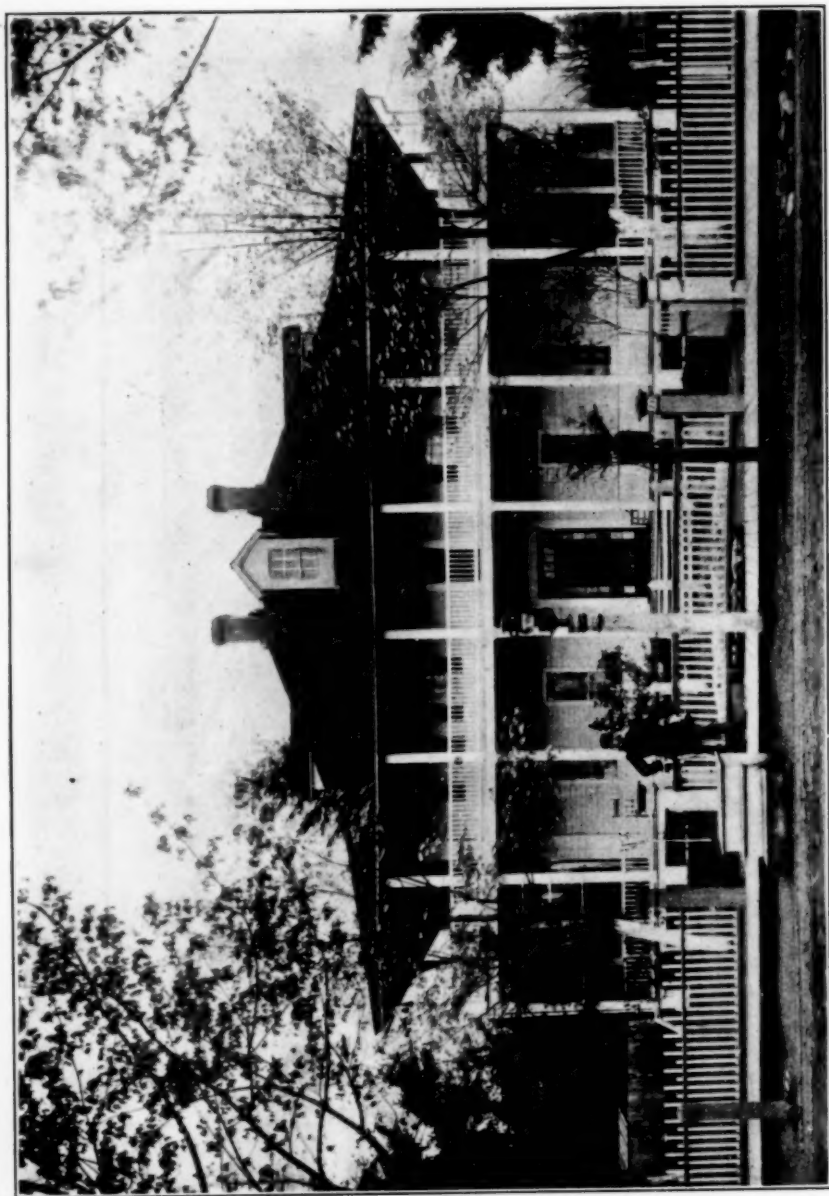
The following was adopted at a meeting held August 10, 1904:

**RESOLVED** that Members and Associate Members be requested to provide themselves with the Badge of the Institution, which will be ready for issue on application at the Secretary's office, or by mail postpaid, on and after October 1st next, upon receipt of 25 cents, which may be remitted in P. O. stamps, or, if preferred, charged to account on the Treasurer's books.

THEO. F. RODENBOUGH,  
Secretary.



Historical Miscellany.



VANCOUVER BARRACKS.  
Officers' Club—"General Grant's Quarters."

## VANCOUVER BARRACKS—PAST AND PRESENT.\*

BY BRIG.-GEN. T. M. ANDERSON, U. S. ARMY.

### II.—PIONEERS AND SOLDIERS



ON the 10th of November, 1848, Cos. M and L of the First Artillery embarked on the steamer *Massachusetts*, and proceeding by the way of Cape Horn, Valparaiso and Honolulu, reached the mouth of the Columbia River exactly six months after leaving New York.

This command was under Bvt. Major Hathaway the other officers were Captain Bennett Hill, Lieutenants Fry, Talbot, J. J. Wood, Talmadge and Dement and Dr. Holsen. Lieut. Powell Wyman did not come out until the following year.

It was on the 13th of May, 1849, that the transport came to anchor opposite the old Salmon house of the Hudson Bay Post of Fort Vancouver. The Artillery Battalion, upon landing, found a well cleared space on the hillside above the stockade, in which they made their camp. The next day a tall fir tree was cleared of its limbs to the height of a hundred feet, and on this improvised staff the American flag was raised for the first time on the north bank of the Columbia.

A few days after the troops arrived Captain Rufus Ingalls, A. Q. M., came up by steamer from California and was made the first quartermaster of the Post, which was designated Columbia Barracks. Nearly all the Hudson Bay buildings outside the stockade were rented for the use of the Government. One little house, which had been built for the Catholic priests, was used for officers' quarters, as there were no padres at the station when the military arrived.

Lieut. James B. Fry, who in the fulness of time was to be Provost Marshal General, was the first Adjutant of the Post. In July Captain Hill's company went to Puget Sound and established Steilacoom. Early in the spring of '49 the Mounted Rifles, under Lieut.-Col. Loring, started from Jefferson Barracks, Mo., for their long march over the plains and mountains. Their route was by Fort Laramie on the Platte, to

\*Continued from the July Number of the JOURNAL.

Fort Hall, thence to the Columbia and down the South bank of the river to the mouth of Hood River, thence down the north bank to Vancouver, and from thence up the Willamette to Oregon City, where they arrived and went into camp. Early in November two troops under Captain Andrew Porter stopped at Fort Hall and one troop at the Dalles of the Columbia. The colonel of the regiment, Bvt. Brig.-Gen. Persifer F. Smith, had been placed in command of the Division of California; "fighting" Joe Hooker was his Adjutant-General and Lieut. Alfred Gibbs of the Rifles was his A. D. C. Lieut. Colonel Loring assumed command of the 11th Military Department.

In March, 1850, the Rifles were ordered to occupy Columbia Barracks and Major Hathaway's command was sent to Astoria.

Before the regiment left Oregon the five Indian chiefs, who had given themselves up as hostages after the war that followed the Whitman Massacre, were hung. This execution was deemed by many a judicial murder. It produced a most unfavorable impression on the military. It is now known that of the Indians executed one had killed Dr. Whitman. Certainly he deserved his fate. As soon as the regiment arrived at its new station the work of constructing barracks and quarters began. The work must have been performed with great energy, for by January of 1851 all the officers and men were housed. The work was done under the supervision of Capt. Rufus Ingalls, Q. M. D., who had come up from California by steamer in March, 1850. One frame building, which had been prepared in Maine and sent by sea around Cape Horn, was erected on the lower plain and is still in use. All the others buildings were made of logs. It was many years before the sides were covered with weatherboarding.

The good work did not go on without question. Sir James Douglas, the chief factor at the station, received Major Hathaway and his command hospitably and cordially; but after the Mounted Rifles arrived and our military headquarters were established here, there began to be friction. The military claimed that they held by right and not by courtesy. The company claimed that their possessory rights were interfered with and their business ruined. The controversies went on with increasing acrimony until finally the once all-powerful



company was restricted to the limits of its stockade and one saw-mill on the river.

The first letter recorded in the Post Letter Book is one from Major Ruff to the Department Commander informing him that certain officers of the county were laying off a town site on the ground where his men were encamped and that they had secured an injunction or restraining order forbidding him from building barracks and quarters.

The proposed city was to be called Columbia and was to be the county seat of the new county of Clarke. The injunction was, however, refused by Judge Strong, the District Judge of the territory, and the city of Columbia never was built. Four years later, after Washington had been segregated from Oregon and formed into an independent territory, the attempt was renewed by the county officers trying to obtain permits from the Hudson Bay Company and the Roman Catholic Church. These corporations were too circumspect to commit themselves, nevertheless some confiding citizens bought lots within the reservation for one dollar. The writer has seen the deeds duly recorded in the Recorder's office of the county. This scheme naturally failed, for Col. Loring had declared a reservation of four miles square as soon as he heard of the first intrusion. The limits of the present reservation of 640 acres were fixed by Lieut.-Col. Bonneville, 4th Infantry, commanding the Post, under the orders of Jefferson Davis, Secretary of War, dated January 15, 1853. It was not until January 18, 1878 that this declaration was confirmed by the executive order of President Hayes.

When Col. Loring first came to the Post, he exercised the authority of Department, Regimental and Post Commander. Lieut. I. N. Palmer was his Post and Regimental Adjutant and Lieut. Robert M. Morris was his A. A. G. for his Department command.

On August 14th he gave the command of the Post to Bvt. Maj. Charles Ruff. In just five weeks there was a conflict of authority. Maj. Ruff's letter of September 22, 1850, complains of the interference of the Department staff officers and asks for independent authority, saying: "It will prevent that triumphant spirit of independence (the exhibition of it so detrimental to discipline) from the orders and control of the commanding officer of the Post so eagerly exercised

and displayed by all the subalterns of these (the staff) departments," etc.

It is curious to note that this is the first of a series of such protests recorded in the Post records and extending thereafter forty years and it might stand as a model for all. Lieut.-Col. ("Tompse") Morris complained of Col. Geo. Wright when they were in the same relative positions, whereupon Wright proceeded to cinch. Then, when the latter officer took command of the Post, he complained as bitterly of General Wool, when he established his headquarters here in 1856. And so the controversy has come down to this day and generation.

"Big fleas have little fleas  
 "And these have less to bite 'em;  
 "And these fleas have lesser fleas,  
 "And so *ad infinitum*."

On January 1, 1851, Col. Loring resumed command of the Post. At that date the roster of the command was as follows:

#### PRESENT.

1. Col. Wm. W. Loring, Commanding Post.
2. Chas. H. Smith, Asst. Surg., Duty at Post.
3. Maj. Geo. B. Crittenden, Mtd. Rifles, In Arrest.
4. First Lieut. Innis A. Palmer, Mtd. Rifles, Adjutant.
5. Capt. John S. Simonson, Mtd. Rifles.
6. Capt. Chas. F. Ruff, Mtd. Rifles, Duty.
7. Capt. Andrew Porter, Mtd. Rifles, Duty.
8. Capt. Llewellyn Jones, Mtd. Rifles, Duty.
9. Capt. Noah Newton, Mtd. Rifles, Duty.
10. First Lieut. John G. Walker, Mtd. Rifles, Duty.
11. First Lieut. Robt. M. Morris, Mtd. Rifles, A. A. G. of Dept.
12. First Lieut. Francis S. H. Russell, Mtd. Rifles, A. C. S.
13. Second Lieut. Geo. W. Hawkins, Mtd. Rifles, Sick.
14. Second Lieut. James Stuart, Mtd. Rifles, Duty (temporary).
15. Second Lieut. Geo. H. Gordon, Mtd. Rifles, Duty.
16. Second Lieut. Wm. B. Lane, Mtd. Rifles, Duty.
17. Second Lieut. Wm. E. Jones, Mtd. Rifles, Duty.
18. Second Lieut. Geo. W. Howland, Mtd. Rifles, Duty.

#### ABSENT.

1. Col. and Bvt. Maj.-Gen. Persifer F. Smith, Commanding Pac. Div.
2. Capt. Michael E. Van Buren, Rectg. Service.
3. First Lieut. A. J. Lindsay, Dalles.
4. Second Lieut. Alfred Gibbs, A. D. C. to Gen'l. Smith.
5. First Lieut. Julian May, Dalles.
6. Second Lieut. Caleb E. Irwein, Dalles.
7. Second Lieut. Bvt. Capt. Gordon Granger, With leave.
8. Second Lieut. Daniel M. Frost.

Among these officers there were four who were married and brought their families with them. They were Captains Simonson, Ruff, Llewellyn Jones, and one other.

The bachelor element was, however, largely in the majority and they held high carnival with the Hudson Bay people and a roistering frontier set at Oregon City. The enlisted men, if tradition can be trusted, were a set of reckless dare-devils, who became an absolute terror to the pious people of the Willamette Valley.

It will be remembered that this part of the country was settled under missionary influence and somewhat affected by puritanical ideas. The people petitioned for the removal of the Rifles.

Their request was granted, and in the spring of 1851 the regiment was given a change of station.

It would, however, be very unjust to a splendid regiment, and one which even then had done great service, to leave the impression that it was made up entirely of dare-devils. Where honor was concerned, they stood upon the splitting of a hair. Among the officers stationed here were two lieutenants who were the black sheep of respectable families. Strong influence had secured them commissions in the Rifles. They were both said to have been exceedingly handsome, and both were as graceful, pleasant and plausible young men as could anywhere be found. As it happened, they lived together, occupying a little cabin next to the old Mission Church. In some way the regiment became convinced that both men had done something dishonorable. After short but solemn deliberation the officers of the regiment called on the offenders in a body. In the interview they were requested to resign. They did so. They were then informed that they need not wait for a formal acceptance, but that a boat awaited them on the river bank. One look at the determined faces around them was enough; they stood not upon the order of their going but went at once. One of these roisterers was subsequently sent to Sing Sing for appropriating money obtained on the sale of a piano which did not belong to him. The other Lothario died in Washington from the effects of a debauch.

Before proceeding with our history another important episode must be related.

On account of the gold excitement in California, there

were many deserters from Columbia Barracks and Oregon City. Two hundred deserted from the Rifles in the winter and spring of 1850. Of these only about eighty made their way to the diggings. Of the remainder some were captured, but many were killed by the Indians or perished from cold or starvation. Some of these wanderers were reduced by intense suffering to cannibalism. Most of the deserters were, however, recaptured by a party under Col. Loring himself. In their pursuit from Oregon City to Rogue River they had to endure almost incredible hardships through snow, sleet and swollen rivers. Nearly all the runaways were recaptured and brought back to this Post.

A company of volunteers found some of these unfortunates in the Umpqua Cañon who had just drawn lots to determine who should be killed and eaten. The captain of the company reported that it was hard to determine who was most delighted to see them, the man who had drawn the prize or the men who were to have devoured him.

Thus it happened, between desertions and other casualties, that when the order for change of station came, the Rifles had not a very large number of men in the ranks to be disposed of, so the officers and non-commissioned officers were sent East by sea, and the privates were transferred to the infantry or to the First Dragoons, then stationed in California.

From those who elected to transfer to the Dragoons, two full companies were formed and Captain Phil Kearney was sent up to take command of them and march them to Benicia. Lieuts. Stuart, Walker and Irwein of the Rifles were attached for the march. Lieut. Talbot, subsequently one of Major Robert Anderson's lieutenants in Fort Sumter, came up with a detachment from Astoria and then about the last of May Kearney started South. At that time Gen. Joe Lane was in the Indian Country trying to make a treaty. But just at the time the regulars reached the Rogue River Valley, the Indians took the war-path and began the most fiendish depredations and cruelties. Captain Kearney at once attacked a large band of them (June 17, 1851), winning a decided victory.

A veteran who was in the fight says the way Kearney charged the savages was simply astounding. He no doubt displayed the same reckless courage that cost him his life eleven years later at Chantilly. The Indians fought well,

but finding the Dragoons were not deterred by boulders, brush or roaring torrents they fled in disorder.

Bvt. Capt. Stewart a gallant officer, was killed. A few days later, having been joined by a number of citizens, Kearney again attacked, winning another victory. After southern Oregon was illuminated with burning houses and hay-ricks, the people made up their minds that frolicking soldiers were preferable to murdering red devils by earnestly asking for Kearney's command to remain. But they could only delay their march until a battalion of volunteers could be put in the field. At the same time General Hitchcock, commanding the Department of California, sent Major Casey with two companies to Post Oxford on the coast.

The few pioneers that are left are very willing to do ample justice now to the Rifles and Dragoons. They were great fighters in their day.

Major Hathaway commanded the Post from June until the arrival of the 4th Infantry in the fall of 1852. He then returned to New York City and in a fit of temporary dementia killed himself at the Astor House.

On September 21st, Lieut.-Col. B. L. E. Bonneville (Irving explorer) arrived with Companies C, G, E, H, band and headquarters of the 4th Infantry. Whistler, the colonel, was then superannuated and unfit for duty. We give the first roster:

## PRESENT.

1. Lieut.-Col. B. L. E. Bonneville, 4th Inf., commanding.
2. Capt. T. L. Brent, Q. M. Dept., Duty.
3. Israel Moses, Asst. Surg., Duty.
4. First Lieut. Thos. R. McConnell, 4th Inf., Regt. Adjt.
5. First Lieut. Ulysses S. Grant, 4th Inf., Regt. Q. M.
6. Capt. Bradford R. Alden, 4th Inf., Duty.
7. Capt. H. D. Wallen, 4th Inf., Duty.
8. Capt. C. C. Augur, 4th Inf., Duty.
9. First Lieut. DeLancy Floyd-Jones, 4th Inf., Duty.
10. Second Lieut. Joseph B. Collins, 4th Inf., Duty.
11. Second Lieut. John Withers, 4th Inf., Duty.
12. Second Lieut. Henry C. Hodges, 4th Inf. Duty.
13. Second Lieut. August V. Kautz, 4th Inf., Duty.

## ABSENT. DET. SERVICE.

1. First Lieut. Henry Prince, 4th Inf., Coast Survey.
2. Second Lieut. Wm. A. Slaughter, 4th Inf., Columbia Bks.

## WITH LEAVE.

1. Colonel William Whistler, 4th Inf.

Eight companies of the regiment sailed from New York City in the *Golden Gate* July 5, 1852, and arrived at Benicia August 18th. The regiment suffered severely from cholera on the Isthmus.

During the year Captains Larned and Haller and Lieuts. D. A. Russell, Maloney, Withers and Hodges of the 4th Infantry and Lieuts. Duncan, Saxton, Arnold and Maury of the 3d Artillery and Lieut. G. B. McClellan of the Engineers reported. The last named lieutenant, while at the Post, lived with U. S. Grant (then called "Sam").

The new commandant's first order made Lieut. McConnell adjutant and Bvt. Capt. Grant A. A. Q. M. He next convened a post council, of which Captains H. D. Wallen, U. S. Grant and D. Floyd Jones were members.

The next order was that each man should be provided with fifty rounds of buck and ball and that Mr. E. E. Camp be post trader. Lieut. McConnell did not enjoy his adjutancy very long. It was the rule with Col. Bonneville to have reveille sounded at five o'clock, coming out upon parade himself and requiring his adjutant also to attend. The adjutant, much disgusted with this requirement, generally took station fully fifty yards from the colonel, and looking very pouty. At last one morning the colonel called out to him during a lull in the music. "*A penny for your thoughts, Mr. McConnell.*" "*I was just wondering,*" replied Mac, "*whether I should ever get so old that I couldn't sleep in the morning.*"

A brief note informed Mac, within an hour, that his resignation as adjutant would be accepted, if tendered.

Among the officers of the 4th, those who were married and had their families here were Major Rains and Captains Haller, Wallen, Augur and Lieut. Jos. B. Collins. Captain Alvord and Lieut. Robt. Macfeely, who reported in 1854, were also married, the latter not, however, until 1857.

In 1853, Dr. B. M. Byrnes relieved Dr. Moses. Lieut. H. C. Hodges was made A. C. S. and A. A. Q. M. Lieut. Hiram Dryer also reported. In July, 1853, the Post was designated Fort Vancouver, as it had been under the Hudson Bay administration. Lieut. Geo. B. McClellan determined its latitude and longitude. This had been ascertained before by the officers of the Hudson Bay's ship, the *Pekin*. After some time spent in preparation Lieuts. McClellan, Sylvester

Maury and H. C. Hodges went off on an exploring expedition in the Cascade range.

The fact has been referred to that when the military came to the Hudson Bay Post, the priests were absent. They returned occasionally and held service, but after Col. Bonneville took command he invited a French priest named Brouillet to return and live at the Post. Father Brouillet, as he was called, was the snuffy, cheery, good-hearted little padre that Chief Factor Douglas sent up with Peter Steen Ogden to rescue the American girls who had been captured by the Indians at the time of the Whitman Massacre. No one but this priest could have recovered these unfortunates, so he was deservedly popular. Col. Bonneville was very friendly with him. The two old Frenchmen set out an orchard on the site of the Kanaka village, worked together, smoked, sipped wine and talked of "la belle France" without a suspicion that their actions would be put in evidence in a great law suit many years after their death.

In the fall of 1852 Major Fitzgerald came up from California with a company of Dragoons and established Fort Jener in Scott Valley. During the winter Capt. Alden with a company of the 4th Infantry was sent down to relieve Fitzgerald, who went over in the spring to the Modoc country, camping near Klamath Lake.

In 1853 the Coquille Indians, on the coast, became hostile and were defeated by Major Casey and Capt. Stoneman. In the summer the Rogue River Indians began hostilities. Capt. Alden with his company was the first to meet the savages. He was soon joined by two volunteer companies from California and a little later by six from Southern Oregon. The volunteers were under Alden's orders until General Joe Lane came, when the command of the whole force was given to him. He fought under Taylor at Buena Vista and was then ordered with his command to the mouth of the Rio Grande to be sent by sea to join Scott's army advancing from Vera Cruz. When he reached Brazos he found that the only boats there had been pronounced unseaworthy and the Quartermaster's Department refused to furnish him transportation. But Lane seized all the boats in the harbor and took his command to Vera Cruz on his own responsibility. Almost any other man in the country would have been court-martialed for this high-handed proceeding, but as Old Joe



had the good luck to get through without accident and whipped the Mexicans at Humanatla, on his way to join Scott, he was praised and not punished for his audacity. After the Mexican War he was made Territorial Governor of Oregon and assumed office on the 3d of March, 1849, the last day of Mr. Polk's administration. In 1851 he was elected a delegate to Congress. In 1853, as above stated, he commanded the Oregon volunteers in the Rogue River war. When the state was admitted, in 1889, he was elected Senator. In 1860 he ran for Vice-President on the Breckinridge ticket.\*

To return to our account of the war in Southern Oregon. The 24th of August found the Indians near Table Rock. The engagement which followed is described by some historians as a desperate and decisive battle; other writers refer to it as a bushwhacking skirmish. The Indians subsequently acknowledged a loss of twelve warriors killed and wounded. The whites lost two killed and five wounded. Among the latter were Gen. Lane and Capt. Alden. Many believe that Lane was wounded by his own men. A gentleman who was present says that it had one unpleasant characteristic common to all Indian fights in a wooded country; in this, that you could not see your enemy. You could see puffs of smoke through the leaves, hear shots, whistling of bullets, and see the bushes shake as bodies of men rushed through them. You could occasionally catch a glimpse of an Indian darting through the brush and you could hear howls, cries, yells, groans and curses. After this battle had lasted for some time, the Indians began calling for Gen. Lane and finally made him understand that they wished to stop fighting and have a talk. These savages were commanded by warriors known to the whites as John, Joe, Sam and Elias. Chief Joe, who was Lane's opponent on this occasion, expected his brother Sam to bring him reinforcements. But Sam, like Hasdrubel of old, did not arrive in time. Hence Joe was willing to talk. While the talk was going on, Col. Ross arrived with a battalion of Volunteers over a hundred strong. This timely reinforcement of the whites caused the Indians to ask for a truce.

\*General Lane was a notable character in the early history of Oregon. He was at once soldier, pioneer, politician and patriot. Many regarded him as a kind of home-made, sage-brush Cincinnatus. He was a brave, simple-minded, honest man; who had great influence in his day with the first white settlers in the Willamette Valley. He would be regarded now as a medieval man, but his neighbors had confidence in him because, as they said, he had "horse sense" and they knew where to find him.

The next day Table Rock was agreed upon as a place of meeting to negotiate terms for a lasting peace. On the 10th of September a large number of Indians came to the place of meeting. The whites also received reinforcements. Capt. A. J. Smith's company of Dragoons came over from Fort Orford on the coast and Lieut. Kautz brought down a howitzer from Fort Vancouver, under the escort of J. W. Nesmith and forty volunteers. Nesmith subsequently became a U. S. Senator. At this Indian Council, which is described as exceedingly grotesque and picturesque, a treaty was made. A reservation was given the Indians near Table Rock. A fort was established near by which was called Fort Lane. It was garrisoned first by Capt. Fitzgerald's company of Dragoons and reinforced soon after by a company of the 4th Infantry. Lieut.-Col. Bonneville was promoted in February, 1853, but remained in command at Fort Vancouver until May. He was succeeded by Bvt. Maj. Gabriel Rains, the man who had been literally hoisted on his own petard. In setting a torpedo for some Indians in Florida he was blown up and lamed for life.

While the Indian warfare we have been describing was going on in southern Oregon, this Post, then known as Fort Vancouver, was under the command of Col. Bonneville, and as stated before his post and regimental quartermaster was Lieut. Ulysses S. Grant. Grant had not brought his wife with him and the routine of the Post was insufferably dull to him. He performed all his duties well and promptly. There is not on record a single reproof and hardly a suggestion. He did everything he could do, but he did not have enough to do. He had his room, the greater part of the time he was here, in the quarters of Capt. Rufus Ingalls, the Department quartermaster, whose house was down on the lower flat near the river and not in the Post proper.

It was here that the good fellows generally assembled in the evenings, particularly when citizens came in as their guests. At that time the old Hudson Bay Post stood near by and the Hudson Bay officers and distinguished foreign travelers often dropped into the hospitable quarters of "Rufe" Ingalls and "Sam" Grant.

Those who knew Grant well in these days were sincerely attached to him. He was known to have two qualities, which were above par on the frontier: pluck and sincerity.

There is a tradition here that when on one occasion private theatricals, or something of the kind, were going on in a little improvised amusement hall, a regular border ruffian came in and began making a disturbance. Grant went over to the desperado and picking him up bodily carried him out on to the parade and told him to go. And he did go.

Of his readiness to help anyone he liked I will give this instance:

While Grant was here as quartermaster, Major Theodore J. Eckerson was here simply in the capacity of ordnance clerk: One day he asked Eckerson if he would not like to be made ordnance storekeeper. He replied that he would like to go to Heaven. Grant wrote out a petition stating his services and character and got it signed by all the officers stationed here at the time, beginning with Col. Bonneville. One Jefferson Davis was at that time Secretary of War. He at once had Eckerson appointed captain ordnance storekeeper. In twelve years the regimental quartermaster was General of the Army. He did not forget his old friend on the Columbia, but had him commissioned in the quartermaster's department. In a few years more he was President and secured two of Eckerson's sons commissions in the Army. Verily Ulysses Grant was a staunch friend to those to whom he gave his friendship. He was generally magnanimous, and there were few wrongs that the silent man could neither forget nor forgive. When, in 1854, he was promoted to his captaincy, his company was stationed at Fort Humboldt, a post on the coast about half way between Astoria and San Francisco. It was an isolated, dreary place, and when the garrison stationed there had no active campaigning, their station was dreary beyond description. Grant had not brought his family to the Pacific Coast, as the journey at that time was long, dangerous and expensive.

While Grant served at Vancouver, he made an excellent quartermaster. As to his zeal, fidelity and ability there was never a question. Although never a talkative man, he was, by tradition, at that time social and particularly fond of hunting and field sports. He and Captain Ingalls always kept horses on the south bank of the Columbia River and would often row over and then dash off on horseback to Oregon City or on some hunting adventure.

Frank Ramsey, an old surviving trapper of those days, says

of him: "Liss Grant was worth the whole pack of them put together" (the other officers). He would go out hunting and trapping with us old fellows and rough it with us just like one of us. There was no infernal nonsense about Liss; he could eat hog and hominy, cook his own deer meat, pack his own traps and ride any critter that went on legs."

Grant's most intimate friend and constant associate at this Post was General (then Captain) Ingalls. In answering the question whether he thought at that time that Grant was a man of unusual ability and destined to rise to great distinction, General Ingalls has said to the writer: "Frankly, I had not at the time, but there was one characteristic as I recalled afterwards, which should have led me to form a better estimate of his ability. He gave a better description of the campaigns of the Mexican War than any man I ever saw and better criticisms of strategy of the war than any man I ever saw. And I recall now that it was not only a matter of great surprise to myself but everybody else. And I remember Old Bonneville saying that 'it was astonishing that a man who did not seem to read military books should have such insight into military movements.'"

None of us know how much other men read, study and think. General Grant's subsequent achievements and particularly his writings show that he read and studied much more than his companions gave him credit for. But the knowledge which proved most useful to him, his knowledge of ground and country, he did not get from books. That cannot be learned second-hand. It is printed in pages of forest, field, mountain and stream. Grant had studied these pages from the banks of the Ohio to the Columbia, from the lakes of Mexico to the shores of the Pacific, and learned his lesson well.

He visited this Post in his trip around the world after his Presidency, showing the greatest interest in the place and talking kindly and familiarly with every old friend and soldier he could find who had been here with him in early days.

[TO BE CONTINUED.]



## THE HIGH COMMAND OF ARMIES.\*

BY GENERAL ZURLINDEN,

(*Revue des Deux Mondes.*)

TRANSLATED BY CAPT. E. P. LAWTON 19TH INFANTRY, FOR THE SECOND DIVISION  
GENERAL STAFF, U. S. A.

ON the 19th of August the first and second German armies are reorganized. Seven army corps and a half constitute the army for the investment of Metz, under the command of Prince Frederick-Charles. A new subdivision of the army is formed of three army corps placed under the command of the Prince of Saxony. General de Steinmetz gives up his command.

On the 21st of August there is a personal letter from General Moltke to General de Stiehle, chief of staff of Prince Frederick-Charles:

"... I will confine myself to calling your attention to the following point: an exit eventually accomplished by the invested army in the direction of the northeast would be a thing of least danger to us, while an analogous movement toward the southeast would be very worrying. It would have for result the interruption of the line Frouard-Strasbourg, of so great importance in view of the march on Chalons. The effective of the army of investment having been fixed at seven army corps and a half, it will be expedient to make an equally desperate resistance on the right bank, at least, in the direction of the south."

By these few very brief words, the chief of staff of Prince Frederick-Charles is thoroughly informed on the essential conditions—in what relates to the harmony of the operations of the German armies—which the army for the investment of Metz must satisfy.

The same day, the 21st of August, there is an order directing the continuation toward the west of the march of the third army, and of the army of the Prince of Saxony, the third army forming in echelon

\* Continued from the July number of the JOURNAL.

to the front. The two armies must reach the line Vitry-le-François-Sainte-Menehould, on the 26th of August.

During the execution of this march, the great German staff receives information, more and more serious, on the subject of the departure of the army of MacMahon from Chalons toward Rheims; then (notably through an article in the newspaper "*Le Temps*") of the movement intended to quickly relieve Bazaine by this army. Nothing is yet sure; they cannot act; but it is important to prepare themselves so as to avoid any loss of time when the moment for action arrives. The correspondence of Marshal Moltke brings to light, on the occasion of this preparation, a work of the staff very interesting to study.

We will consider, in order not to transcend the limits of our study, only the excellent measures taken to assure the concentration of the army of the Prince of Saxony. This concentration was not to be undertaken "except upon information received by his Royal Highness the Prince of Saxony, the arrival of which could not be waited for here (Instructions of the 25th of August, 1870). On the same night a lieutenant-colonel of the great staff was sent to the headquarters of the Prince of Saxony to disclose the opinions and projects of the great staff, and to help in a decision to be found at the same time on these projects, and on information received on arrival, and which is as yet unknown to the general staff.

The change of front of the two armies, and the march toward the north are executed.

On the evening of the 29th of August they expect, at the great headquarters of the German army, a general battle on the morrow against the army of MacMahon. Whence, the following order, dated from Grandpré at 11 o'clock at night:

"All the news received to-day accord in demonstrating that the enemy will be to-morrow morning with his principal forces between Beaumont and le Chesne, and eventually to the south of that line.

"His Majesty orders that he be attacked.

"The subdivision of the army under his Royal Highness the Prince of Saxony will cross at 10 o'clock the line Beauclair-Fossé, directing itself on Beaumont. It will make use of the roads to the east of the highway Busancy-Beaumont. The Guard, which will temporarily form the reserve, must have evacuated this route by 8 o'clock in the morning.

"The third army will break camp early and direct its right wing on Beaumont via Busancy. It will hold itself ready to support with two corps the offensive of his Royal Highness the Prince of Saxony, while the other corps will direct itself at first rather toward le Chesne.

"His Majesty will start from here for Busancy at 10 o'clock in the morning."

The French corps of General de Failly is alone affected in consequence of the execution of this order. It is beaten and repulsed with great loss.

The battle of Sedan is prepared for by the following order, dated from the headquarters at Busancy, 11 P. M., August 30, 1870:

"Although no report has yet been made showing at what points the army corps terminated the combat, it is none the less certain that the enemy retreated everywhere, and has been beaten.

"We must, to-morrow, early in the morning, continue the forward movement, and attack the enemy vigorously everywhere that he can be found on this side of the Meuse, and drive him back into



the narrowest space possible between that river and the Belgic frontier.

"The subdivision of the army under his Royal Highness the Prince Royal of Saxony has, in particular, the mission of preventing the left wing of the enemy from escaping toward the east. It will be expedient to cross over, if possible, two army corps to the right bank of the Meuse to attack the enemy in flank and rear in case he should take up a position facing Mouzon.

"The third army will act on its side against the front and right wing of the French. It will establish on the left bank as much artillery as possible to harass the advance columns which may be camping in the valley of the Meuse, and on the other bank below Mouzon.

"If the enemy should penetrate into Belgian territory without being immediately disarmed he should be pursued there without hesitation.

"His Majesty will start from here for Sommauthe at 8.30 A. M."

The other directions for the battle of Sedan were given verbally.

Starting from this sad epoch the regular French troops disappeared. Circumstances render things even more easy for the Germans. The correspondence of Marshal Bazaine furnish numerous subjects for study, very interesting, very useful, in regard to the investment of Paris, the operations against Metz, then against Orleans, on the Loire in the north, and in the east. But the extracts we have already cited largely suffice to show the processes made use of by the great German staff. We will limit ourselves, in order not to prolong our work, to showing again, by some few examples, the care exercised by General Moltke in the direction of the small, as well as of the great, operations in the last periods of the war.

On the 15th of October there is a telegram dated from Versailles to General de Werder, who is operating in the east:

"His Majesty orders that you attack the enemy without other preoccupation. His force can only comprise depot troops, volunteers, and certainly not above thirty-six pieces of artillery; a base and railroad are not indispensable."

General de Werder had asked for modifications of his march and support from the railroad from Neufchateau to Chaumont.

On the 16th of October there is a telegram to the same general:

" . . . Don't consider the city of Vesoul as a point of direction for your ulterior march, but rather as the place where the enemy is to be found."

On the 26th of October from Versailles there are instructions to all the commanders-in-chief, as follows:

"Lately, there have appeared several times, in different German papers, letters, undoubtedly emanating from correspondents located at some of the general headquarters; they designate specifically the positions of the troops before Paris, and make known also projected operations. This must be absolutely forbidden. . . ."

In a personal letter from General Moltke to General Stiehle, chief of staff of Prince Frederick-Charles—dated from Versailles the 14th of November, and intended to fully enlighten him on the subject of the intervention of the second army in the neighborhood of Orleans and the Loire—there is found the following remark: "Justice must be rendered to the powerful resources of this country, and to the patriotism of the French; after having seen led into captivity the whole French army, France has been able to put in the



field, in a very short time, considering the circumstances, a new army which merits our full attention. . . ."

On the 7th of November orders are given for organizing an army subdivision to be under the command of the Grand Duke of Mecklenburg-Schwerin, with a view to opposing the eventual march of a relieving French army wishing to free Paris.

On the 17th of November, General Moltke writes from Versailles to Colonel Krenski, chief of staff of this army subdivision: "It is not a question," says he to him, "of apportioning for the defense of each route a special fraction; it is expected, on the contrary, that you will take the offensive on the route by which would advance the strongest column of the enemy. Your successes on a single route will prevent any movement of the adversary on the others;" and, further on: "The delicate point of your mission is to discover exactly the center of gravity against which you will take the offensive with all of your forces; then, I guarantee your success.

"P. S.—It is with joy that I have just learned that to-morrow you attack Dreux."

The object of this letter appears to be to put the army subdivision of the grand duke in the right way again. Did it succeed? It may be doubted; for on the 26th of November, the Grand Duke of Mecklenburg-Schwerin receives from Versailles the following telegram:

"At the sitting to-day His Majesty the King ordered that, by reason of the peculiar importance that the operations of the army subdivision placed under your command are now going to assume, Lieutenant-General Stosch, to whom His Majesty has deigned to confide his intentions, should fulfil until further orders the functions of chief of staff of the army subdivision.

"I do not believe that I should fail to respectfully add that a special order of His Majesty will be addressed to your Royal Highness."

Was not this saying: "Let your new chief of staff act. His mode of action will be that of the King himself"?

We will stop our citations here. They are sufficiently convincing to show the clearness, the distinctness, the remarkable foresightedness, of the orders and instructions of Marshal Moltke, and to show how he made use of the great staff in a way to assure the direction of the operations of the German armies. After having been, for nearly twelve years, in relation to his sovereign, the organ, essential and indefatigable, in preparation for war, and especially for war against France, he becomes the soul of the high directing power in war itself.

The staffs of the armies, chosen, formed, and thoroughly instructed through his care, are remarkably prepared to avoid all error of interpretation in the execution of his instructions; to make every will, every energy, tend toward the end stated by him in the name of the sovereign generalissimo. Moreover, the chiefs of staff of the armies are his pupils of the great staff, his friends. In difficult circumstances he corresponds directly with them, to make them understand better the intentions of the high command.

The officers whom he sends to follow the operations of the armies are always listened to, because the whole army knows that instructions given by them will be approved by the Emperor.

This is an organization of the staff service whose perfection and

power have never been surpassed in any epoch of history, and which, in Germany, singularly facilitates the question of the high command and the designation of the chiefs of armies. This organization may be characterized in a few words: "Preponderance of the staff founded on the absolute confidence of the sovereign generalissimo in his chief of staff."

## II.—FRENCH ORGANIZATION.

### I.

The organization of the high command, and of the great staff in Germany is possible only because the government and the supreme command of the armies, in peace as in war, are comprised in the person of the Emperor. This system could be applied to our republic only by confiding to a dictator—as was done in the Roman republic—all civil and military powers during the continuance of war. And even with a dictator, would it be possible to admit the preponderance of the staff? In any case, dealing with a government responsible itself to the parliament and the country, there must be commanders in chief completely and clearly responsible. To give to the staff a responsibility, special and immediate toward the armies would be to organize duality of command, and, consequently, indecision and trouble in the direction of operations. To us the staff can only be the instrument of command: but it is the latter's most essential, most precious, aid; it must be unceasingly perfected.

This is not the sole consequence of our political *régime*. Democracies are restless; they have a tendency to suspect men whom talents or circumstances have brought to the front; not because they do not recognize their qualities and their services, but because they fear for the republic. Voting is no longer done with chattels; but the old ostracism of Athens exists still, though in a latent state. It must be taken into account when it is a question of the organization of the high command in a republic. The question of the high command is then a delicate one with us. To resolve it, we must co-ordinate conditions, difficult, sometimes contradictory, conditions inherent, at the same time, in the rôle of every government during war, to the action of high command, and to the functions of staffs. These difficulties, great as they may seem to be, have once already been overcome under our first republic, but only after a period of trials and faults which lasted until the end of the Terror, in 1794, and which it is important to recall in order to avoid falling into the same errors.

Toward the middle of 1793 the situation of France was terrible. On all of our frontiers our armies were repulsed. Dumouriez had just passed over to the enemy. In the interior, insurrection was breaking out on all sides, in Vendée, at Lyons, at Marseilles. The Convention stiffens against the peril; it renews the Committee of Public Safety, and enrolls as representatives of the people those most renowned for their political ardor, their energy, and their talents.

Carnot is especially charged with affairs of war in conjunction with Prieur de la Côte-D'Or and Robert Lindet. The Government is declared revolutionary until peace is attained. The executive council, composed of ministers, the generals, the constituent bodies, are all placed under the surveillance of the Committee of Public Safety, which thus dominates, during the year of the Terror, entire

France, disposing, without control, of persons, existences, fortunes, armies, generals. . . . The instruments which permit the Committee of Public Safety to exercise this frightful limitless power over the whole extent of the country, and implant at all our frontiers an impulse of somber, terrible energy, are the representatives of the people, on missions either to the departments or the armies.

These representatives act in groups of two. Sometimes several groups are united. They have to render an account of their mission once a week to the convention, every two days to the Committee of Public Safety. They can be relieved every month. They must concert with generals; watch over the supplying of the armies; exercise an incessant surveillance over the contractors, as well as over the conduct of the generals, officers, and soldiers. Their powers are limitless. They can suspend the civil and military authorities and replace them. Their decrees are provisional laws; no power other than the Convention can overrule them.

The Convention having declared that terror is the base of government, the representatives proceed to frighten. In all the armies they suspend generals, have them arrested, and send them before the revolutionary tribunals. The remarkable work of W. H. Wallon on "The Representatives of the People on Mission" gives, in regard to this matter, some startling revelations. For us, we will confine ourselves here to the events which transpire in Provence and on the frontiers of the Alps, as being especially interesting from the point of view of our study.

In this region the execution of generals had commenced at the end of 1792, before the creation of the Committee of Public Safety; they had been carried out by the Convention itself, which, after some hesitation, had issued a writ against General Montesquiou-Fezensac, whose fortunate and well-planned operations had, however, permitted of the annexation of Savoie. General Anselme, who commanded, he also very energetically, in the Comté of Nice, and who had facilitated the taking possession of it, was not more fortunate. Two ordinary dragoons of his army came to accuse him, before the bar of the convention, of not knowing how to maintain discipline among his troops! He was not long in being arrested.

The Army of the South is then cut in two: the troops of Montesquiou, in the Savoie and Dauphine Alps, forms the Army of the Alps, the command of which is given to general Kellermann, the hero of Valmy. Those of General Anselme, in the Comté of Nice, form the Army of Italy, under the command of General Biron, called from the Army of the Rhine.

General Kellermann is not slow in giving umbrage. In a letter to the Convention, of the 10th of April, 1793, he proposes to let the Piedmontese exhaust themselves against our strongholds and ruin themselves in men and money, while he himself shall assemble his troops in good positions to train them and "instruct them in grand army movements," after which he will march on the enemy, deliver battle, and easily retake the lost places. His letter is intercepted at Lyons, by order of the representatives on mission there, who conclude that Kellermann is a traitor: some, because the troops he wishes to exercise have no need of it, since they had made the preceding campaign; others, because Kellermann wishes to deliver a "vainglorious" battle, and treat afterward for peace with the Prussians, whose good graces he had captured at Valmy (letters to the Committee of Public Safety of the 13th and 14th of April, 1793). Kellermann is

ordered to Paris; but, defended by other representatives, he succeeds in having himself maintained at his post.

With the Army of Italy, Biron displays, during the first three months of 1793, and in spite of the winter, great activity; then he is, to his great regret, relieved of his command and sent into Vendée, where, disgusted by the disorder and lack of discipline among the volunteers, he is not slow in sending in his resignation.

General Brunet replaces him in command of the Army of Italy and gives proof of energy, as well as his lieutenants, Serrurier and Masséna. The formidable position of Aulion is attacked with thoroughness and remarkable vigor on three different occasions. It remains with the enemy; but the Maniabo, Breil, and Brouis are ours; and, in addition, the right of the Army of the Alps was able to profit by these efforts and seize Haute-Tinée. In spite of these proofs of very real worth, Brunet is removed. Denounced before the convention by the representatives of the people for not having wished to send them re-enforcements in their efforts to suppress the insurrection of Marseilles, and of having thus opposed himself to "great measures of public safety," he is condemned to death and executed on the 14th of November, 1793.

Toward the same epoch, and in spite of his successes against the Piedmontese, Kellermann is thrown into prison and remains there for a year.

However, at Marseilles the insurrection is repressed. Lyons is retaken. The siege of Toulon is pushed energetically. The representatives of the people intervene in the operations, not only to render them more active, but to direct them. They bring to the front a young artillery officer whose plan of attack for the point of Eguilette they probably cause to be adopted. This is the estimation of General du Teil, commanding the siege artillery, of this officer, in his report to the Minister of War: "I find myself wanting in words to express the merits of Buonaparte; much science, as much intelligence and too much bravery, feebly express the merits of this worthy officer. It is for you, Mr. Minister, to consecrate them to the glory of the Republic."

Of the Army of the Alps, after the arrest of Kellermann, one sees succeed each other, in four months, four commanders in chief, Doppet, Carreaux, Pellapra, and finally, Alexander Dumas, the father and grandfather of our two great writers—who enters on his duties the 21st of January, 1794. On the reiterated orders of the Committee of Public Safety General Alexander Dumas tries a first time to carry Mont-Cenis and Little Saint Bernard. The snow makes him desist. He recommences at the end of April and succeeds.

The great crest of the Alps on that side is ours.

In the Army of Italy, Dumerbion, who succeeds Brunet, finds his troops diminished by 3,000 men, who are sent before Toulon. The Austrians take up the offensive again. Our soldiers, conducted by Dugommier and Masséna, show prodigious resistance to fatigue and perform prodigies of valor.

After the taking of Toulon, the representatives of the people have Bonaparte named as general of brigade, commanding the artillery of the Army of Italy, and soon, under their impulse, the attacking in front only of the position of Aulion-Saorge is renounced; they try to turn it by having a strong detachment enter Italy by the Litoral and then move against the rear of the Austrians. This operation is confided to Masséna; it succeeds. The crest of the Alps from Mt.

Blanc to the sea is ours, then. At the same time, Robespierre, the younger, and Ricord arrange to have studied, probably by Bonaparte, and submitted to the Committee of Public Safety, plans of operations with a view to co-operation of the Armies of Italy and the Alps. In this theater of operations, as on the Rhine, as with all the armies, the representatives of the people intervene in the direction and even the execution of the operations, either in their own name or in the name of the Committee of Public Safety.

Immediately after the revolution of Thermidor and the fall of Robespierre, the representatives with the Army of the Alps, Salicetti, Albitte, and Laporte, write, on the 6th of August, 1794, to the Convention to denounce their colleague, Ricord, and General Bonaparte:

"The head of the tyrant (Robespierre) has fallen, and the veil is torn aside. . . . You must know that Bonaparte and Ricord himself have avowed to Salicetti that a pretense only of attacking Coni would be made, but that nothing of this should be told to the representatives. . . . They wished to prepare reverses for the Army of the Alps.

"Such is, citizens, the well-known plan to-day of Robespierre (the younger) and Ricord. It tallies perfectly with all the movements of the enemy. Bonaparte was their man, their maker of plans, to which we had to agree. Bonaparte has repaired to Genoa, authorized by Ricord. Why?

"It is of first importance to remove Ricord and Bonaparte; we will assume the responsibility of assuring ourselves of their persons and papers and sending them to Paris."

Bonaparte is, in fact, arrested; but the correctness of his conduct is soon demonstrated by the papers seized with him. He is released.

Some months previously, in March, 1794, General Hoche had been relieved from duty with the Army of the Moselle on the complaint of the representatives of the people. They did not dare to arrest him in the midst of the troops which he had just led to victory, and they had sent him into Provence under the pretext of giving him the command of the army of Italy. On his arrival there they had him arrested and sent to the Conciergerie. He was saved only by the revolution of Thermidor.

While the representatives of the people perform this task in the name of the Committee of Public Safety, the ministers have also their agents in certain places. At the commencement of October, 1793, the Minister of War notifies the Committee of Public Safety that his agents with the army of the Alps are the citizens Chevrillon and Priere. This last, Priere, writes to the Minister on the 3d of October in a letter dated from Digne, and with the orthography of a woman cook, to tell him a little of everything, even of the bells of the churches, "which he orders taken down according to the decree . . . and which are down." Dissatisfied with not receiving more useful information, the Minister, Bouchotte, writes on the margin of this letter: "One of the most important things in the mission of the agents of the council is to obtain information, and especially from the soldiers, of the officers who do not merit public confidence, and of those who have patriotism and loyalty. Write a circular thereupon to the agents." (Archives of War, Army of the Alps.)

On the 23d of October two other agents, Brusle and Verzade, who are performing their functions at Nice, write to the Minister of War: "We have just received the letter in which you request us to inform ourselves from the soldiers as to officers who should be degraded

or advanced. We are associating ourselves with the patriots of the club, which is in great part composed of soldiers, in order to promptly satisfy your request. . . .

The Terror ends with Thermidor. During this somber period the politics of the Committee of Public Safety was inspired by Machiavelli; it sacrificed everything persons, liberty, justice, to the interests of the state, to the safety of the country. Everything gave way to its orders. . . . In the armies, the generals saw themselves in a cruel alternative; certain of being guillotined if they do not execute to the letter the orders given to them in the name of the Committee of Public Safety, or if they do not succeed in executing them, they resign themselves to obeying, which they do with an energy and valor without parallel.

The direction of operations escaped from them. It belonged exclusively, during the Terror to the Committee of Public Safety and its representatives. The great principle of unity of direction, which alone permits of success in war, was not *then* violated. But what would have become of our armies, if, instead of the slow war of the epoch, of the defensive war, the adversaries of France had applied the energetic principles of the offensive, bold and violent, which came to the front two years later in the immortal campaign of 1796, through the young artillery officer, unearthed at the siege of Toulon by the representatives of the people. Facing situations which, instead of remaining the same during months, may be transformed and greatly modified from day to day, from hour to hour, through the initiative of the enemy, what results could be expected from the intervention at a distance of the Committee of Public Safety and its orders dating back several days? Under such conditions, strained to excess, where events precipitate themselves, where every hesitation, every false indication, might bring disaster, would the representatives of the people have dared to take the responsibility for the orders; to substitute their will for that of the chiefs of the army; or have bothered them, thwarted them, at the moment when they would have need of their coolness, their intelligence, their experience, all of their force of character, to weigh the latest information and form definitely resolutions decisive of the fate of their troops and the country?

With the present system of war, such interventions would lead fatally to defeat. And, moreover, in the glorious years which follow the Terror, Carnot renounces having representatives with the commander-in-chief. He recognizes how indispensable it is to leave to the latter the full initiative for the means of execution, and contents himself with indicating to them, sometimes with too many details, the general end.

Again, what must have been the discipline of troops in the midst of encouragements for accusations, of which we have given some examples; in the midst of incessant arrests of distinguished generals like Montesquiou, Anselme, Brunet, Kellermann, Hoche, even Bonaparte? If the country was saved, it is because the ardent devotion of the troops and people were substituted for discipline; because we were, at that moment, a nation in arms, enthusiastic with patriotism and liberty, facing the armies, slow with routine, of old Europe. But let us not forget that hereafter we will have to struggle against nations armed like ourselves, neglecting nothing for their live forces; and that every lapse in discipline, every weakness from the point of view of cohesion, solidity, *esprit de corps* among the officers, any lack



of that reciprocal confidence which should exist between the chiefs and soldiers, will lead us fatally to the greatest disasters.

Is this saying that there is nothing worth retaining in the administration of the Committee of Public Safety, even during the year of the Terror? No; from it can be drawn a new proof of the influence of governmental energy upon the progress of operations of armies. In that theater of operations in the southeast, of which we have just spoken, attack succeeds attack. Nothing stops our generals, neither the fatigues of the mountains, nor the rigor of the climate, nor reverses. All, successively, give proof of a very great vigor. The impulse of the government incites them to act without respite, to confront all difficulties, all perils.

Another epoch of our history, when the government made its action felt with firmness in the high conduct of war, was under Cardinal Richelieu in 1640, when Arras was besieged by three French armies, commanded by the marshals—Chaulnes, Chatillon, and Meilleraye. The Spaniards marched to the relief of the place. The marshals held a council for the purpose of determining whether they should move out from the lines to deliver battle. They could not agree, and, according to the memoirs of Puysegur, they hurriedly send M. de Fabert, the future marshal of France, to the Cardinal, at Doulans, to ask orders of him. Cardinal Richelieu replies to them: " . . . When the King confided to you the command of armies, he thought you capable. It matters little to him whether you move out or not from your lines; but you will answer for it with your heads if you do not take the city."

Arras was taken. The whimsical reply of the cardinal—rough and cruel as it was—discloses in a few words the essential duties of every government in war:

To designate the army chiefs;

To indicate the end to be attained;

To be careful not to intervene in the means of execution, which should be left at the disposition of the military chiefs;

To hold the latter responsible for the conduct of their operations. This idea of the responsibility of the military chiefs does not date from Richelieu. In his memoirs, Xenophon makes Socrates say: "Since the fortune of the Republic often rests upon the generals, those should be severely punished who, having solicited this employment, have neglected to render themselves capable of exercising it."

## II.

The most imperious duty of the Government, that which will involve most directly, toward the parliament and the country, the responsibility of the cabinet which is in power at the moment of war, is the definitive selection of the chiefs of the armies. It is to this cabinet that the military chiefs will, in their turn, be responsible for the conduct of their operations. It rests on it to prevent their nomination as a last resort. The choice of preceding cabinets can and ought to serve as a guide, but can neither bind nor shelter it.

During the wars of our first republic nothing limited the choice of the government; nothing prevented it from designating to command the armies the most capable and energetic generals of division, whatever their seniority. The government kept in its hands this powerful stimulant, of complete liberty of choice, well calculated to excite the generals to keep themselves well trained physically and



intellectually during peace, and to distinguish themselves and excel in war. Their assignment orders were largely sufficient to give authority to the improvised chiefs, like Jourdan, Hoche, Masséna, Bonaparte, who knew how to make themselves obeyed by generals older and of longer service than they and how to lead them to victory.

But at that epoch—it is important not to forget—war was carried on slowly; the troops had time to become disciplined, to become hardened in campaign itself; the chiefs had time to reflect, to settle themselves in their positions of command; the Committee of Public Safety had time to feel about them and to make mistakes even, at the beginning of their mission. To-day it will be no longer so. Events will crowd each other immediately after the declaration of war.

It becomes a question of life and death the having entirely ready to act, from the first hour of hostilities, not only the troops, but the staffs and the chiefs of the armies.

These chiefs should have been notified in advance of the high mission reserved for them. It is indispensable to give them the time and means for considering and preparing themselves for their great rôle. However, to safeguard the interests of France, which are so gravely pledged by their appointments; to spare the susceptibilities of our republican *régime*; to preserve the stimulant of complete liberty of choice on the part of the government, it seems better to give during peace only a provisional character to the appointments of the army chiefs, and to leave to the government the power of examining them, and of changing them, if it judges it necessary, at the beginning of each year.

The most serious appointment is that of the commander-in-chief of the armies of the northeast, responsible for the conduct of operations on the principal and decisive theater of war; of him who is called the *generalissimo*, possibly rightfully, since he is undeniably the first of our generals, as the fate of the country will depend on his valor and energy.

Nothing should be neglected to surround this appointment with all the guarantees possible, and to enlarge in time of peace, while at the same time giving to it only a provisional character, the position and authority of the chief called to play such a rôle.

He should, of necessity, be consulted on the choice of his major-general, and on that of his lieutenants, the army commanders. As to these latter—the history of our wars abundantly show it—physical activity, joined, be it well understood, to the other necessary qualifications, should be an indispensable condition. They have need of it, more even than the commanders of army corps themselves, by reason of the extent of their field of action.

Like them, the *generalissimo* will have need of physical activity; but he must, especially, be distinguished for his high qualities—of judgment, good sense, intelligence, and, above all, of character, strength of mind, and will power. The day when we shall have found the general officer possessed of these guarantees to a very high degree, and inspiring complete confidence, it would be deplorable to see him relieved of his functions through the age limit. The government should have the right to continue him in service as long as it judges him useful to the country.

It is important also to remark that the fate of the nation cannot be left to the mercy of diseases and accidents, and that therefore the

generalissimo, like the army commanders, should be duplicated in time of peace by eventual substitutes.

It is not alone before the war, by appointing the army chiefs, by indicating the ends to be attained in the different theaters of operations, that governmental action should make itself felt, firm, energetic foreseeing; it is also during the course of the operations.

With the considerable masses put in movement, the lines of operations of the war will soon be modified by events and battles. It is important for the government to be able, with surety and without loss of time, to prescribe measures to meet these modifications in the different theaters of operations. In order to permit it to satisfy this rôle, analogous to that which was so brilliantly filled by the great Carnot in the wars of the first republic, it is indispensable that the government should have at hand, at the time of the declaration of war, an organ of experience, competency, and authority; entirely ready to aid him in this great mission.

This organ can be none other than the general staff of the army, undoubtedly reduced by the departures for the armies, but preserving at its head the Minister of War, in war, as in peace, the chief of staff of the army. After having prepared for the war on great lines, as in small details, the chief of staff will be, during the war itself, an aid precious and indispensable, to the government. Among his important attributes, the one which will demand most tact and firmness will be that of remembering—sometimes in the midst of the inquietudes and the overexcitement of public opinion—how indispensable it is to avoid everything that might, during action, thwart the initiative or disturb the coolness of the commanders-in-chief, and of persisting in showing the entire confidence of the government in them, until such a time as, after very clear signs of weakness or negligence, the interests of the country demand their replacement.

During peace the chief of staff of the army is the aid of the Minister of War in the continuous preparations for the employment of the forces of the nation in war. He is especially charged with the direction of the staff service, with the distribution and instruction of the officers of this service. In this connection one of the most important duties should be the preparation for war of the staffs of armies and groups of armies.

It is not sufficient, in fact, for the army chiefs to be designated in advance and enabled to prepare themselves. It is necessary also that, from the beginning of the operations, they should find in their staffs officers well prepared to make known their will, and supervise the execution of it; broken in to all the details of the command of modern armies; knowing thoroughly their probable theaters of operations; well prepared to give, without loss of time, and with thorough knowledge, the information of which a chief, whatever may be his own preparation and capabilities, will always have need, to make his troops march, subsist, and fight.

The officers who compose army staffs should accustom themselves to work together, and to comprehend quickly and well the orders of their chiefs; they should be well known to them, in order to be judiciously employed on exceptional details, each according to his special qualifications. The army staff service should be so prepared that, on the first day of war, the chiefs of staff may not be absorbed by pre-occupation of details; that they may have their minds free; that their thoughts may be fixed ahead; and that they

may be at the beginning of the war, as always, the aids and confidants of their generals in the operations designed for meeting and overcoming the enemy.

The rôle of chief of staff, as may be seen, is not without capital importance to the destinies of the country.

This rôle requires experience, judgment, intelligence, character, a great faculty for work.

Here, again, the day when we have found the man answering well to these qualifications, we should have the power to retain him with jealous care regardless of age limit.

### III.

We have tried to show what should be, under our present *régime* the rôle of the government and the preparation of the high command, and of the staffs of the armies; but what measures have been taken up to the present? We will examine into it rapidly, and finally conclude by making some urgent suggestions for perfecting the system in existence to-day:

Up to last year, at the moment of war, the staff of the army was becoming vacated; the chief of staff of the army had given up his functions beside the Secretary of War to become the major-general of the group of armies in the northeast. The Government had no longer at its disposition to assume the high direction of war, but a personnel whose competency and authority were considerably diminished. To-day the chief of staff of the army retains his functions both in war and in peace. This is a great advance which it is important to maintain.

The staffs of the armies are designated in advance, but they do not exist under the law. They should be brought under it, and the necessary measures taken to assemble them readily and often in order to prepare them thoroughly for their great rôle and train them for their war service and their probable operations not only around the base for concentration, but beyond our frontiers.

The high command is better prepared. The chiefs for the armies are designated in time of peace. They reside at Paris as members of the superior Council of War. The eventual commander-in-chief of the group of armies of the northeast is vice-president of this Council. All find in the staff of the army the necessary facilities for preparing themselves for their great functions. Their inspections of the armies enable them to become acquainted with their army corps commanders, their general officers, and their corps chiefs; to watch over and direct the maneuvers, and thus to keep in touch with the troops.

Four years ago it was desired to remove them from Paris and replace them at the head of the army corps during peace; with the reservation that they should be relieved of these commands on war being declared. The advantage thus given them of keeping in permanent touch with the troops did not fail to present serious inconveniences in mobilization. Moreover, their facilities for preparing themselves for their great mission were diminished; since their time was absorbed by the thousand little details inherent to the command of an army corps, and which have no useful bearing on the preparation for war of an army chief.

Besides the generals designated to command the armies, the superior Council of War comprises to-day a certain number of

members who would not have immediate employment in war, and who are simply at the disposition of the minister. Here lies exaggeration which does not seem to be justified. The superior Council will work only too much better if it comprises, under the presidency of the Minister of War, no others than the generals designated for the command of the armies, the chief of the general staff of the army, and the major-general of the armies of the northeast. There will be every advantage in utilizing the activity of the general officers designated to replace, at need, the army commanders, by leaving them at the head of the army corps, while at the same time imposing on them the duty of preparing themselves for their eventual rôle of army chiefs.

Our present organization is not, then, far removed from the true one; but it presents one capital defect: It governs only by decrees; there have already been ten of them; the last dates back a few weeks, and, as a consequence, it is subject to all the fluctuations of politics, to the preconceived ideas of the ministers who pass and repass at the head of the department of war.

This question is one of exceptional gravity. The safety of the country depends on it. It has been ripened by numerous trials, by an experience sufficiently prolonged. It is time for the law to intervene—and it can now do so with perfect safety.

Here are, in the way of suggestion and as a conclusion of our study, some ideas of a bill which would appear to us to answer to the needs of France:

A.—Proposition of law for the staff of the army.

I. To prepare at all times for the employment of the forces of the nation in war, to aid the government in watching over and directing the *ensemble* of the operations during the war itself, the Minister of War shall have at his disposition the staff of the army.

II. The functions of this staff shall be as follows:

1. In time of peace (enunciate the functions now conferred by our regulations, adding thereto: The concentration, in time of war, of the armies and groups of armies in the different theaters of operations; the designation of the first objectives of the war; . . . the preparation and co-ordination of the work of the superior council of war; the assembly of the documents necessary to the general officers designated for the eventual command of the armies; the studies relative to the preparation for war of the staffs of these armies and groups of armies).

2. In time of war: The preparation of measures destined to impress incessantly upon the war an impetus, firm, energetic, foreseeing, while at the same time assuring the full initiative which the commanders-in-chief should enjoy in the means of execution; the co-ordination of the efforts made in the different theaters of operations; the measures to be taken to avoid injurious indiscretions in the conduct of the armies; the new turns to be given to the operations by reason of events of the war; the designation of new objectives; the creation of new armies.

III. The general of division placed at the head of the staff of the army shall hold the title of chief of staff of the army. He shall be appointed and can be kept in his high position without regard to age limit, by decree issued from the Council of Ministers on the recommendation of the Minister of War.

IV. The chief of staff of the army shall be charged, under the authority of the minister, with the direction of the staff service; with

the choice, classification, and instruction of the officers of this service. He shall watch to see that, as well in the various staffs as in the superior school of war, there is unity of views and doctrines.

V. Each year the chief of staff of the army shall assemble for three months the staffs of the armies and groups of armies, to have them prosecute work relating to their probable theaters of operations and intended to train them for the service they will have to do during war.

For a fourth month these staffs shall be under the army inspectors.

B.—Proposition of law for the high command and the superior Council of War:

I. At the beginning of each year the Minister of War shall submit to the government a list of generals of division who appear to him capable of commanding the armies or groups of armies, provided for in the plan of mobilization, as well as a list of their eventual substitutes. The general officers who figure on these lists shall be notified confidentially. It shall be their duty to prepare themselves for these high functions. The chief of staff of the army shall put at their disposition all necessary information.

II. The official order definitely appointing the commanders of armies and groups of armies, and their eventual substitutes, shall be issued only at the moment of war and for the duration of the hostilities.

III. In time of peace, the inspection of the armies shall be made, in matters relating to the preparation for war, and in conformity with the orders of the minister, by the general officers designated, in the first rank, to command these armies. These general officers shall have the title of army inspectors.

IV. The general officer designated to command the group of armies of the northeast shall receive the title of chief army inspector. He shall have rank and precedence over the other army inspectors, and the latter over the commanders of army corps.

V. The assemblage of army inspectors shall constitute under the presidency of the Minister of War the superior Council of War. The chief army inspector shall be vice-president of this council. Also members of this council shall be the chief of staff of the army, who shall act as recorder; and the general officer named as major-general of the group of armies of the northeast.

## GERMAN IDEAS ON THE RÔLE AND EMPLOYMENT OF CAVALRY.

(Translated by permission of the Chief of the 2nd Bureau of the French General Staff, from the "*Revue Militaire des Armées Étrangères*," for *Journal R. U. S. Inst.*)

**M**ODERN tactics are only a new step forward along an already old road. The late Anglo-Boer war has called forth in certain circles new ideas as to the rôle of cavalry.

The English cavalry, often surprised in open country, only sent in to the authorities very insufficient intelligence, while in actual fighting it played no part. To use one expressive word, it was a "failure." In consequence, it has been hastily assumed in some quarters that cavalry must give up mounted action.

The lance, a weapon proscribed by Lord Roberts, is no longer mentioned. The sabre might still be tolerated, but the true arm is the carbine, while the use of the horse is only to assure more rapid movement from point to point.

Nothing is to be feared from an enemy's cavalry, even when very superior in numbers, so long as men could rapidly dismount and oppose the hostile squadrons with rifle fire, the great thing being to carefully avoid a hand-to-hand action with the sister arm.

These principles being admitted, it consequently followed:

1. The effective of the cavalry could be reduced, the large units of this arm being broken up and divided among the infantry.
2. No more masses of horsemen, no more charges, which recall the heroic days.
3. Instruction in fighting on foot should take first place—in some cases, must be the whole instruction.

The study which follows seeks only to show the opinions expressed in Germany on the different questions raised. Readers need not expect an account of a lively polemic between the partisans of "shock" and those of "fire" tactics; between the partisans of the lance and those of the sabre.

There has been no such polemic.

But it is none the less interesting to ascertain the trend of ideas, after a series of events, that are sometimes presented as new facts which should revolutionize war.

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For many years past every German writer on the subject has sought to prove the necessity for increasing the effective strength of the cavalry. These complaints have lately assumed a very lively complexion. On the eve of the vote of a new Army bill, it was considered necessary to prepare public opinion for the new sacrifices demanded.

Opinion, on the other hand—at least, that of the Reichstag—appeared so unfavorable to the project, that the bringing forward of the new bill has been postponed. But we only wish to study here the movement of ideas in military circles, and not the views of the public. The authorities wish to see the effective strength of the cavalry increased. Let us examine the arguments put forward by those who are pleading for this increase.

The method of procedure is known, and often used in Germany: A dark picture is painted to prove that both, in the East and West, the cavalry of the Triple Alliance is in a state of lamentable inferiority in face of the Russian and French.

According to Lieut.-Colonel Fabricius, Germany and Austria together could only put into line on the Eastern Frontier 449 squadrons, as against 711 Russian. Against France, Germany could only oppose 198 squadrons to 236.

"This state of things," says the writer, "is all the more disquieting when we consider that the French and Russian cavalry are stationed, in time of peace, very much nearer the frontier than the German," and he concludes by urging the necessity of creating forty-seven new squadrons.

His demands, however, are moderate, compared to those of Pelet-Narbonne. That indefatigable writer, in his work "More Cavalry," utters "a cry of distress in the interest of the defense of the country."



"For several years," he writes, "persons well acquainted with the military situation have raised the disquieting question: When will our Army authorities lay before the Reichstag a bill to so increase the German cavalry as to put an end to a situation which can only be considered as fraught with immediate danger?"

In agreement with Bissing and Bernhardi—if we only cite writers recognized as the best authorities—Pelet-Narbonne shows that the rôle of cavalry in future wars has in no way been diminished.

"In the future, some millions of men will be in line. . . . With such masses obliged to extend, not only as regards their front, but also as regards their depth, more time is required to concentrate before the decisive point.

"The zones of safety and of scouting must be more extended.

"The difficulties of this duty have increased proportionately to its importance."

Bernhardi develops the same arguments,\* and comes to the conclusion that: "It may be said, with some appearance of truth, while the tactical rôle of cavalry has decreased, its strategical importance has considerably increased."

It may be admitted, following up this idea more closely, that inasmuch as the power of modern arms has rendered all surprise by fire disastrous, so ought the medium for ensuring safety to be more developed than formerly. It ought, at the same time, to be more mobile: riveted permanently to the troops to be covered, it would condemn them to ataxy; like the steel nets, which protect battle-ships at anchor against torpedoes, but prevent rapid movement.

To all units, from detachments up to army corps, the necessity of a numerous cavalry is therefore imperative.

At the same time, Bernhardi justly observes that the railways, which, as lines of communication, are both so essential and so fragile, offer new objectives to cavalry.

The perfecting of the fighting machine in general should increase, then, the importance of cavalry, and the interest in seeing it both numerous and strong; and truly we may well ask if the constant diminution of the cavalry in all armies is not caused more by budgetary, social, and political reasons than by the increasing power of weapons of offence.

Petel-Narbonne holds, in any case, that we have gone too far on that road; he seeks to lay down the proportion of cavalry necessary in a modern Army, showing that under Napoleon it was one-fifth of the numbers of the infantry, that it at present is only one-tenth, and that it is necessary to bring it up again to about one-eighth. He consequently calls for the creation of "166 new squadrons"! He admits, moreover, that he is under no illusion as to the realization of his proposals, but he does not concern himself with the financial aspect of the question; he sees a danger and raises a "cry of alarm." Parliament should know what responsibilities it saddles itself with.

In similar language another cavalry officer, von Kleist, had already protested against the weak proportion of his arm in modern armies.†

"To weaken or alter the nature of cavalry," he writes, "in order to reinforce, in the same proportion, the infantry and artillery, will be to cut the wings of the eagle in the vain hope that its claws will grow better."

\*"Unsere Kavallerie im nächsten Kriege," Berlin, 1903.

†"Die Offizier-Patrouille," Berlin, 1898.



With all these writers the same two ideas are repeated as a veritable *Leitmotive*:

1. The rôle of the cavalry has grown in importance.
2. The German cavalry ought to be increased.

No discordant voice has yet been raised. But in spite of this vigorous campaign, Parliament remains unmoved. The cavalry is expensive; it is the aristocratic arm of the service; its action, more moral than material, is hardly understood by the public.

However that may be, in competent circles the conviction exists that the military authorities will pursue the realization of their scheme with the steadiness of purpose and by means of such artifices as are customary with them.

The formation of some squadrons of *chasseurs à cheval*,\* actually to the number of seventeen, nominally intended to meet a new requirement, has only been a disguised increase of fighting units.

Since 1896, immediately after the creation of the first *Meldereiter*, it was freely stated in military circles that the reasons given in advance for the step were only flimsy pretexts. "We shall demand," it was said, "the constitution of a squadron of this kind for each kind of army corps; later on these squadrons will be united into regiments, repeating thus, with regard to Parliament, the tactics which were successful in bringing about the formation of new regiments of infantry under the form of fourth demi-battalions."

The prediction has been fully realized. Before they had even obtained from Parliament all the proposed squadrons of *chasseurs à cheval*, the military authorities, under the pretext of instructional necessities, have grouped these squadrons†; they have demanded the creation of regimental staffs, obstinately refused on the other hand by the Reichstag; majors, in default of "regimental chiefs," have been placed at the head of these groups, and we have seen, in 1902, the combined regiment of *Chasseurs à Cheval* of Posen attached to a division of cavalry taking part in the Imperial maneuvers.

One can well believe, therefore, that this remarkable pertinacity in following up the desired object, will continue to bear fruit.

The superior authorities, more than ever convinced of the necessity of having a powerful cavalry, and determined to obtain an increase of the effectives, will, sooner or later, more or less completely obtain it.

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If there is complete unanimity with regard to the importance of cavalry, opinions differ with regard to its organization. Pelet-Narbonne, Balck, and behind them the Press, demand the constitution of permanent divisions.

"We are only deceiving ourselves," says Pelet-Narbonne, "if we compare the work to be obtained in case of war from an improvised division with that which will be effected by a division well trained in advance." He reckons that twelve permanent divisions of cavalry, uniformly made up of twenty-four squadrons, are necessary. Moreover, each army corps should have at its own disposition a brigade of cavalry to ensure its security; the infantry division should simply have a squadron of *Chasseurs à Cheval* for orderly and escort duty. The army corps has become, as a matter of fact, the real unit;

\*The "Meldereiter" (Despatch-riders) have been renamed "Jäger zu Pferde" since 1898.

†Of the seventeen existing squadrons, five are grouped at Posen, and six others are grouped two and two at Graudenz, Langensalza and Chemnitz.

and it is its commander who ought to dispose of the cavalry charged with its safety.

Balck\* shares the views of Pelet-Narbonne as to the necessity for permanent divisions. He only recommends making the necessary exchanges among regiments in order to avoid all specialization.

Already, at an earlier date, Frederick-Charles had demanded the creation of permanent divisions, and both Verdy du Vernois and Schlichting held the same opinion.

Bernhardi, on the other hand, does not believe it to be wise to constitute cavalry divisions in time of peace, and pleads in favor of "Inspections."† He holds that the idea of a uniform constitution of these large units is wrong. "In each particular case," he maintains, "there ought to be a corresponding different grouping of forces."

"One may be for 'Divisions' or 'Inspections,'" writes an anonymous author in the *Militär Wochenblatt*. "What is certain is that the weakness of our cavalry arises from the fact that there do not exist in times of peace superior units to the brigade."

We shall see, further on, that if Bernhardi protests against the organizations of permanent divisions, it is not with the view of employing cavalry in small units.

Before Bernhardi, Prince Hohenlohe had already pronounced against the creation of cavalry divisions, from fear of seeing by degrees two cavalries formed, the one of the 1st class and the other of the 2d class; he was also afraid of seeing the arm specialized.

It is to this prejudice the superior authorities seem to be yielding. In spite of the arguments advanced by the most competent authorities, in spite of the opinion of almost the whole cavalry, they have maintained up to now the principle of organization in isolated brigades, and the attachment of these, in times of peace, to the infantry divisions.‡ However the regiments may be allotted on mobilization, the brigades go in turn to make up the two or three cavalry divisions formed each year at the time of the maneuvers. The squadrons of *Chasseurs à Cheval*, even, although in theory intended for despatch-riders and escorts, are drilled in the same manner as other corps. The German authorities intend to have only one description of cavalry—excellent—and one understanding all the needs and weaknesses of the other arms by working constantly with them.

Perhaps we might find an explanation of the actual state of things from reasons of an entirely different order.

A true cavalry leader is rare.

He is frequently lacking in qualities he ought to possess.

In appointing, when the need arises, the commander of a cavalry division, there will be at least a fair measure of certainty, that one

\*"Taktik, Berlin, 1903.

†In the German Army, there is an Inspector-General of Cavalry, with four Inspectors to assist him, hence the term "Inspections." These Inspectors, in carrying out their duties, have, however, to act under the Generals commanding Army Corps, and in war-time, would command the four Cavalry Divisions, which would be formed. The only standing Cavalry Division, is that of the Guards Corps, which has its own Divisional General. Six regiments, with two batteries of horse artillery, make up a division of Cavalry, two of which are formed each year for the Imperial maneuvers.

‡Except in the Guard Corps, which, as already mentioned, possesses a cavalry division of four brigades

will be found possessing at least the requisite qualities of activity. However that may be, it can safely be affirmed that the maintenance of the actual organization does not correspond with an intention of acting by brigades.

It is evident that unanimity, absent apparently, on the question of organization, exists nearly entirely on the subject of the proper methods of employment.

\* \* \* \* \*

The critics of the Press are, however, very much alive, when each year the Kaiser in person heads a charge of fifty squadrons against his infantry.

"The spectator, still astonished at the mad attempt of the cavalry," writes Pelet-Narbonne,\* "is ere long stupified on learning that the umpires have declared the attack to have succeeded."

But "the spectator does not evidently take into consideration the state of disorder into which a body of men may be considered to have been thrown."

On the subject of the check of the 38th German Brigade at Vionville, Fritz Hoenig admits: "A few active squadrons (of the enemy), and not a man would have escaped"; and he maintains: "At these moments it does not matter in the least whether these human phantoms are armed with repeating rifles, flint-lock muskets, or pitchforks."

"The same thing happened," continues Pelet-Narbonne, "during the retreat of the Italians after the battle of Adowa. The Abyssinian horsemen hurled themselves singly on the ranks of the flying Italian infantry, slaying them with their lances without meeting any resistance."

*"In the future, similar situations to the above will present themselves oftener than in the past. First, the efficacy of the present rifle is so great, and the effect it produces so rapid, that in a few minutes very heavy losses can be inflicted on an enemy."*

"Then, the short service system and infantry fighting formations will contribute to provoke panics."

"At the decisive moment of action, that is to say, at the final moment for attack, one only sees, as a matter of fact, long lines of skirmishers without serious reserves, and the influence of the few unwounded officers that remain must necessarily be very well. The want of war experience, common to all European Armies, will do the rest."

*"Then, if on the one hand the terrible efficiency of the modern fire-arm has rendered a cavalry charge much more difficult than formerly, on the other hand, the factors mentioned above are to a greater degree in its favor."*

To the argument drawn from the South African war, Pelet-Narbonne opposes the opinion of the Boer general, Delarey. "As far as I am concerned," said the latter, "I owe my greatest successes, including the capture of Lord Methuen, to cavalry attacks."

Pelet-Narbonne also points out that on certain occasions (for instance, at Elandslaagte and at Kimberley) the English cavalry had made equally successful and decisive charges, and he asserts that "in every case the troops who yielded to these attacks were solid bodies, commanded by intrepid leaders."

\*"Jahrbücher für die Deutsche Armee und Marine, November, 1902.

"The man is always the same," writes Balck (an infantry-man), "and now, as formerly, sensitive to the impression produced by surprise; and he will be all the more so, as the fighting will last for a longer time, and his nerves be subjected to a severer strain."

With regard to the regulations, he affirms that "cavalry has only one mode of fighting, viz., the attack. It can, *even in face of the three arms*, penetrate up to the enemy's positions, sabre detachments, carry off guns."

This conviction the Kaiser endeavors more than ever to impress on the minds of his cavalry officers, and Bissing writes that: "They cannot be grateful enough to him for so doing."

It is held, moreover, even by the innovators, that attacks by small bodies of cavalry, acting on the spur of the moment, have still chances of being successful. It is the employment on a grand scale of masses of cavalry in battle which provokes the indignation of these latter.

"Assuredly," replies Pelet-Narbonne, "the attacks by small bodies can more often be carried out than those executed by large masses. They are easier to lead, give a better chance of surprising the enemy, and may achieve partial success; but cavalry can only intervene in a decisive manner in a battle if they charge in several successive lines, or if they combine a frontal with a flank attack. This requires a considerable force. . . ."

"Large masses of cavalry possess by themselves, and better than formerly, the means of diverting the enemy preparatory to an attack before launching themselves upon him with the cold steel, or of supporting the other arms in their efforts by bringing into action their horse artillery and mitrailleuses batteries, and even by using the carbine fire of their men.

"We see, then, that the corps and divisions of cavalry of the present day are the units which combine in themselves the possibilities of action of the three arms to a much greater degree than during the campaign of 1870," and that these units are able to bring these means of action to bear in an unexpected and decisive manner for deciding the issue of a battle.

"It results from all this, that it is indispensable to train cavalry, to attack in large masses, if we wish such attacks to be successful when they have to be made in earnest. . . ."

"The permanent creation of cavalry corps would not appear necessary, nor even rational; but the temporary combination of considerable masses of cavalry, placed under the orders of a single head presents no inconvenience when the question of carrying out a clearly defined object is at stake."

"Masses of cavalry," writes Bissing in his turn, "would have produced great results in recent wars if a Seidlitz had been at their head. But, if some commanders of cavalry like Seidlitz owe their immortal success to their talents being developed by practice, it is necessary, if these talents are to show and develop themselves, that opportunities for practice should be given in time of peace. . . ."

The Regulations, finally, sum up and affirm these same ideas:

"To carry out the attack there should be a combination of all arms. It will be in this case particularly advantageous to unite masses of cavalry (several divisions) and to make them act in concert."

The term "*masses*," which is used continually by German writers, does not imply by any means the idea of "*massed formations*."

The misunderstanding which has arisen sometimes on the subject of infantry attacks, should not crop up again.

We want large masses in order to be able to dispose, at the decisive point, of *powerful resources*, so as to be able to at once deceive the troops within whose range of vision the terrain of the attacks falls, to be able to develop, as Pelet-Narbonne calls it, "the means of action of the three arms."

These masses will only be some *reservoirs of forces*, permitting action by powerful fire, repeated on front and flank, until disorder has been produced, leaving thus to the chief, up to the last moment, sufficient forces to make the most of success. The cavalry, it is well understood, would only act in a manner suited to its actual armament: *approche défilée*\*, loose formations, rapid deployments.

It may be worth while to recall that the instructions given before the cavalry maneuvers at Rethel in 1903, were praised without reserve by the German Press.

To resume, the desire finds expression everywhere in Germany for large masses of cavalry, which can intervene in battle, contribute to success, and perhaps be able to snatch victory.

And in order to make his cavalry long to emulate the exploits of Seidlitz, the Kaiser in person leads fifty squadrons to the attack on the same plain of Rossbach.

[TO BE CONTINUED.]

## RAILWAYS IN MODERN WARFARE.

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**N**OW that Army Reform is one of the burning questions of the hour, and that the keynote of such reform is contained in the phrase "preparedness for war," it is reasonable to suppose that the necessity for some sort of a military organization for the effective use of railways in war will not be lost sight of.

That railways will play a very important part in any modern campaign can hardly be denied, and recent wars have demonstrated in no small degree the influence they have had not only strategically, but in some cases even tactically, on the battlefield. Further, military history tell us of the dire results of the want of a proper military railway organization in the stress of war, and to what lamentable chaos and confusion, not to say disaster, the absence of such leads. The Germans realized the need of a military railway administration during the war of 1866, and the outcome of their experience in this campaign was, that in the war of 1870, they possessed a thoroughly well-organized system. The French, on the other hand, had none, as they learnt to their cost, but have since profited by their bitter experience in 1870-71. Does it not, therefore, behoove us not to neglect this important branch of military science? Can it be said that the lessons of our recent wars in the Soudan and South Africa have led to the establishment of organizations similar to those now in vogue with the armies of Continental Powers? I fear but to a slight extent as yet, although the material to form the nucleus of a

\* *Approche défilée*, an advance covered by a clever use of the accidents of the ground.

permanent military railway organization is still available from among the officers and men who served on the Railway Staff in the Soudan and South Africa, even scattered as they now are over the four quarters of the Empire.

The reader may now well ask, What is a military railway organization, of what does it consist, and what are its duties? In answer, I cannot do better than refer him to the following official publication, viz:—"History of the Railways During the War in South Africa, 1899-1902," by Lieut.-Colonel Sir E. P. C. Girouard, K.C.M.G., D.S.O., Royal Engineers. In this work will be found not only a concise history of the part played by the railways in the war, but also a description of the formation of and necessity for an intermediary or Military Controlling Staff to act as a "channel of communication" or "buffer" between the military authorities and the civilian railway officials. It will be seen that the cardinal point to be borne in mind is the distinct separation and difference between the "Military Controlling Staff" and the "Technical Working Staff." The former is the military railway organization needed to obtain the best results from a military point of view from the use of such railway systems as exist in the theater of war, and should consist of officers and men of the Royal Engineers, and other branches of the service, who have been specially trained in railway work; whereas the latter consists of the ordinary civilian *personnel* required to work any railway system in any country in peace time, supplemented in war by military engineers, both officers and men, as may be required, or the technical staff may be entirely military. I would now refer the reader to the following pages of the History, viz.:—for a description of a Military Controlling Staff, pp. 10 to 25, 31 and 32, 34 to 38; for that of a Technical Working Staff, organized in the midst of war, pp. 37 to 64.

A pamphlet was published by authority in Pretoria, in October, 1900, entitled "Working of Railways—Duties of Railway Staff Officers." This useful little work and the history constitute apparently the only literature on the subject extant in our service, though in France and Germany there are many and various works to be found dealing with this branch of staff duties, and thus emphasizing its importance.

A perusal of the above will give the reader a clear and succinct account of what a military railway organization is, and of the nature of the work and duties of the officers and men pertaining thereto.

The absolute necessity for an Intermediary Staff is clearly shown in the history, as also is the reason for the temporary reconstruction of damaged lines being carried out by Royal Engineers, and not by the Civil Engineering Department of the system concerned. (See pp. 26 and 27.)

There are, however, several points which deserve considerable attention, with which I now propose briefly to deal.

#### I. MOBILIZATION FOR HOME DEFENSE.

The question now arises, How is a military railway organization to be adapted to the conditions prevailing in the United Kingdom? As regards the Technical Working Staff, the resources of our great railway companies are so gigantic that it is doubtful whether any extraneous assistance from military engineers would be required, except possibly for temporary repairs to damage done by an enemy that had effected a landing on our shores, and become possessed of



the railways in the vicinity. As regards a Military Controlling Staff, the following outline is suggested:—

- a. A Central Committee to be established in London, of very similar composition to the present "War Railway Council," but remodeled to suit the conditions of the new Army Council and Imperial Defense Committee.
- b. Subordinate committees in each command or district, consisting of an officer of the General Staff (if possible, one who has had experience or training in railway duties in war), and a senior civilian traffic official of the railway company concerned.
- c. At important military centers, such as "Mobilization" and "Concentration" stations, a selected and qualified officer to be appointed for railway duties when required. Such officer to be styled a Railway Staff Officer, and to be in touch with the traffic officials at his station to whom his "status" and duties should be quite familiar.
- d. The portion of the schemes for mobilization for home defense affecting railways, to be drawn up by the Central Committee, local details to be worked out by the subordinate committees, so that on the order to mobilize, what is required of the railway companies may be exactly known both by the military railway officers and the civil railway officials.

## 2. FOREIGN EXPEDITIONS OR CAMPAIGNS ABROAD.

What is evidently required is a large reserve or nucleus of officers and men trained in railway work and duties, from whom the numbers required to form the Military Controlling Staff, and such Technical Working Staff as found necessary, would be taken to form the Director of Railways Department of the Expeditionary Force or Field Army.

This reserve might well be obtained as follows:—

- a. By increasing the number of young officers of the Royal Engineers permitted to go through courses of one or two years with our big railway companies.
- b. By allowing a limited number of officers of other branches of the Service to go through a modified traffic course, say of six months, with a British, Indian, or Colonial Railway.
- c. All officers who serve on the staff of the Director of Railways in the South African, Soudan, and China campaigns for six months or more to be noted as qualified in railway duties, and to be employed as officers of the Intermediary or Military Controlling Staff at all maneuvers in the United Kingdom, India, or the Colonies, at which railways would be employed. Such officers, when actually employed in railway duties, to be given assistants from partially trained or untrained officers, who would thereby gain experience, and at the conclusion of the maneuvers be reported on as qualified or otherwise.
- d. As regards the provision of men in sufficient quantity for a Technical Working Staff, the experience of the South African War has conclusively proved the necessity for



having some system of registration among railway employees in peace time, whereby for a small retaining fee the names of all such men willing to render themselves liable to be called out for work on railways abroad in case of war would be recorded.

- e. Further the advisability of increasing the number of Railway Companies Royal Engineers might well be considered, and possibly more important still, the raising of more Railway Volunteer Corps on the lines of the existing corps at Crewe.

### 3. SOME NOTES ON THE DUTIES OF THE INTERMEDIARY STAFF.

- a. In war, the Director of Railways of the Army or Field Force, and in peace the president of the Central Committee represent the heads of the Intermediary Staff. The former would be on the staff of the General Officer Commanding the Army or Field Force; the latter should be under the Quartermaster-General or Third Military Member of the Army Council.
- b. Assistant or Deputy Assistant Directors of Railways would be appointed in war in number according to the size of the theater of operations and number of railway systems involved. In order to fulfil their principal duty, *i.e.* of seeing that all military requirements for rail transport, etc., are carried out by the Technical Working Staff of the railway system concerned, an Assistant or Deputy Assistant Director of Railways must continually, as it were, "feel the pulse" of the traffic—the ideal to be aimed at being to obtain the maximum amount of work from the railway, with the minimum amount of interference from the military. The appointment also of the subordinate officers of the Intermediary Staff rests in their hands, and they are responsible for their efficiency in every respect.
- c. The duties of a Railway Staff Officer are enumerated on page 24 of the History, and this alone would suffice to show the reader their multifarious and arduous nature. At large and important railway stations in war time there is continuous and incessant work for a Railway Staff Officer throughout the entire twenty-four hours, thus necessitating more than one officer for the post. Further, in countries where there is a civil population in the war area of any size, there is consequently more or less civil traffic both of passengers and goods, and the Railway Staff Officer has the additional, often very onerous, duties of checking all the permits issued by the Provost Marshals and Police Departments for such traffic to be accepted by the railway officials.

### 4. MILITARY INTERFERENCE.

Too much insistence cannot be placed on the absolute necessity for impressing on all ranks of the Army or Field Force the fact that the officers of the Intermediary Staff *alone* can give orders to the members of the Technical Working Staff, be they soldiers or civilians.

This fact should be embodied in our regulations, and brought into effect for peace conditions as well as for war. Of course the officers of the Intermediary Staff must be properly trained in their duties, otherwise the benefit of such orders and regulations would be greatly lessened.

I see no reason why all officers should not, during their service, become acquainted with and obtain some knowledge of railway working, and it should most certainly form an important part of the course at the Staff College, so that every officer of the General Staff in war could be thoroughly acquainted with the principles of military railway organization. The interference by military, so much complained of by the civilian railway officials in South Africa, will, I feel sure, be far less in any future campaign, provided the "status" of the Intermediary Staff is fully recognized by our military authorities.

##### 5. SOME NOTES ON A TECHNICAL WORKING STAFF IN WAR.

It will be obvious from a perusal of the History that it is in the highest degree hazardous in war to remove the civilian officials of a railway system in a *friendly country*, and to attempt to work it with military engineers alone. This was not done in South Africa, except in so far as rapid and temporary reconstruction is concerned.

As regards the working and management of a railway system in a *hostile country*, either in case of lines captured from the enemy, as in South Africa, or actually constructed *ab initio*, as in the Soudan, this may have to be undertaken by such military railway *personnel* as is available, but undoubtedly civilian aid in the Traffic and Locomotive Departments will be required sooner or later, as the demands on the newly acquired lines become greater and the traffic proportionately heavier.

It is hard to exaggerate the difficulties that are met with in getting into working order a railway system that has been purposely destroyed by the enemy. On paper it sounds fairly simple to build a new railway or repair an existing one and work it, but the process actually is one that taxes the resources and ingenuity of a Technical Working Staff, whether civil or military, or both, to the utmost. In South Africa unique and magnificent work was done by the Works Department of the Imperial Military Railways, which has not attracted as much attention or received as much recognition as it deserved. On page 50 of the History will be found the following passage:—"The repairing of the railway kept pace with the advance of the Army in almost every case." This and the construction of the railway in the Soudan is assuredly without parallel in military history.

Untinted praise is also due to the "Running Staff" (*i.e.* the drivers, firemen and guards of trains) of the Imperial Military Railways, who worked their trains royally and fearlessly in constant danger of being blown up by dynamite mines, or fired at by skilled marksmen.

If a large reserve of trained military men is not forthcoming in time of war, it entails employing men that cannot be relied on, or withdrawing soldiers with railway experience from the ranks, both of which courses are open to grave objections.

## 6. ARMORED TRAINS.

These are undoubtedly of the greatest value for patrolling the line in rear of an advancing army, and of preventing the railway from being attacked and destroyed by "guerillas," but it is essential that they should be properly employed and supplemented by fortified posts or blockhouses along the line. It is not the rôle of an armored train to be sent ahead of a force to reconnoitre. In the guerilla warfare in South Africa, the armored trains did very valuable work, more especially in connection with Lord Kitchener's famous "drives," when they were invariably extensively used. Each train was a completely equipped fighting unit, and bore no small resemblance to a gunboat of the Royal Navy, having its searchlight, telegraph station (so that, at any halt, connection with the railway telegraph wires along the line could be easily effected, and rapid communication with the nearest stations secured), its armament usually of a naval Q.F. gun and a machine gun, its infantry garrison of about 30 men, and also two officers (one of whom was invariably an artillery officer).

Another use the armored trains were frequently put to was the duty of escorting special trains, such as those conveying the Commander-in-Chief, or the High-Commissioner, or goods trains, conveying ammunition or important stores, which it was vital should not fall into the hands of the enemy.

## 7. HOSPITAL OR AMBULANCE TRAINS UNDER THE RED CROSS.

These are another feature of the use of railways in modern warfare, and were brought to a great pitch of excellence in South Africa, where eventually eight were used during the war and kept continually at work. Each train consisted of eight bogie corridor saloons, and provided comfortable lying-down accommodation for from 70 to 100 patients, and had kitchen, pharmacy, lavatories, etc., and compartments for the staff of the trains, which consisted of two medical officers, two nursing sisters and a proportion of non-commissioned officers and men of the Royal Army Medical Corps.

Sick and wounded were brought in from the front in transport wagons and carts to the nearest point on the railway where a hospital train could be sent. This was then loaded up, and proceeded at once as a special train to the base or such station that had a general hospital, with room for the trainload of patients. These general hospitals were established invariably at convenient railway centers, and were provided with special sidings, platforms, and when possible, electric light installations, so that at whatever hour of the night or day the hospital train arrived, its load of sick and wounded could be promptly taken out of the train, and removed to the hospital wards.

## 8. CONCLUSION.

I cannot leave this subject without reference to the present campaign in the Far East, where military developments are awaited with intense interest by all soldiers, and the use made of railways during the progress of the operations will, no doubt, be amply demonstrated on both sides.

How will Russia grapple with the task of supplying the huge army which, no doubt, she will, and is, concentrating in Manchuria by means of the single line of the Trans-Siberian and Manchurian Rail-

way? Will Japan be forced to construct a line from Seoul to Yalu? And how, in the event of her forces occupying Manchuria, will she repair and work the line in that country? Time alone can answer these questions.

## MAKING BRICKS WITHOUT STRAW, OR DEFENDING HARBORS WITHOUT GUNS.

BY CAPTAIN A. E. C. MYERS, R.G.A.

(*Proceedings Royal Artillery Inst.*)

ONE cannot study the question of the defense of harbors against torpedo-boats without coming to the conclusion that the Royal Garrison Artillery are much in the position of the unfortunate people who were given no straw to make their bricks with. On reading through, in the January *Proceedings*, Mr. Jane's interesting lecture on this subject, and the valuable discussion afterward, one notices that no definite opinion is laid down as to the number of guns required to stop a certain number of torpedo-boats, and I cannot remember any authoritative statement or any discussion on this exceedingly important point.

Mr. Jane calls attention to the absence of any sealed pattern plan of defense. Of course it is impossible to have the same plan of defense for every kind of harbor, but I venture to say that it ought to be very easy to have a sealed pattern armament for defending a harbor liable to torpedo-boat attack. All data that can possibly be wanted to decide the armament are to hand, *i. e.* dealing with torpedo-boats alone, and not touching the question of submarines.

Firstly, as to the number of attacking boats. Any serious attack will be made, we know, by large numbers of boats, two or three divisions. Well, I think that, although three divisions may rendezvous outside the harbor to be attacked, not more than two divisions will actually attack simultaneously. I think the idea of 18 boats trying to rush in together, is a little too thick. We may take it then that we must legislate for 12 boats.

Secondly, as to the number of guns required to defeat these 12 boats. Last year at Shoeburyness, against high-speed targets 18 feet by 4 feet with no beam, the 12-prs. got an average of 1.45 hits per gun per minute at night. This was not with trained layers, but with each man of the detachment laying and firing off a gun. Trained layers against a torpedo-boat would get a big increase of hits, the target having beam and being so much longer; but as a set-off, in the real thing a big percentage must be taken off for excitement, and the fact of being shot at; although, of course, the fire from the boats will be of a wild and inaccurate description, hurting no one. One must also take into account the time a boat will be in the lighted area; this will be well under a minute—in fact, more often than not, nearer half a minute. Taking, then, the 1.45 hits per gun per minute of Shoeburyness as a basis, and taking into account the above considerations, we cannot credit a gun with defeating more than one boat in a rush in. We have already come to the conclusion we should be prepared for 12 boats and therefore we want 12 guns. Nothing under a 12-pr. will really stop a boat, and, therefore, we want twelve 12-prs. or guns of over that caliber.

As regards lights, very briefly, we want sentry beams far enough out to give men at guns sufficient warning, and dispersed beams to give a large enough lighted area.

To sum up, we know that any number of boats up to 12 will, at night or in thick weather, simultaneously make a dash in; and to sink them we know we want twelve 12-prs., and a proper disposition of lights.

That's what we want.

What have we got?

How many harbors of the United Kingdom have got twelve 12-pr. Q.F.'s? Has Portsmouth got that number for the actual defense of the harbor entrance? It may or may not have twelve 12-prs., but any-way it has a number of 6-prs.; thus a gun admittedly of insufficient stopping power and inaccurate at night is forming part of the defense of the most important naval base in the world.

At the present moment I can call to mind four harbors, which I suppose I must not name, two of which any-way are heavily armed with big guns, and the Q.F. defense is as follows:—

1. Three 6-prs. 2. Four 12-prs. 3. Four 47". 4. Two 47" and two 12-prs.

The number of search-lights being any-way in two cases proportionately miserable, and absolutely inadequate.

Mr. Jane dismisses the subject of the number of guns required in a line and a half. He says: "There is, of course, the question of what is to happen if more boats than guns should be used." "If," indeed. There's no "if" in the case at all. Looking at the above four places (there may be others equally as bad if not worse), it's a certainty that not only will more boats than guns be used, but in some cases the proportional will be 3 to 1. As to what will happen, the defenders will be like the man who fell out of the balloon, not in it, or rather the torpedo-boats will be in the harbor, doing what they like.

Mr. Jane also says that if any attack is made it will be pushed home as long as a single boat is left, and that if 12 boats attack it will be no good accounting for 11, and again if one of the dozen gets through, untold damage may be done, all of which is generally conceded, but the guns are not mounted.

The initial cost of installing a group of two 12-prs. would be, I believe, about £2,000, and yet a few of them are grudging to protect works on which millions have been spent, and harbors where ships worth tens of millions may lie in war time. The Navy have, or are supposed to have, a two-power standard. Why should we not have our standard, viz.: a 12-boat standard?

The Navy have got their ships principally by pressure from the outside public, because the outside public know a good deal now about the Navy. In our case everything is kept so secret and confidential that the public can know nothing of any shortcomings or deficiencies in the armament line, although, of course, all the armaments are known to foreign powers.

We have lecture after lecture from naval officers, R.E. officers, and our own people, one and all agreeing that the attack on harbors will be made by large numbers of boats, and yet in hardly any instance is there mounted half the number of Q.F. guns necessary to sink the number of boats that are certain to attack the place. We may have the most careful organization, the most cordial co-operation, the most perfect system of distribution of fire, and the most highly trained layers, but if we are given four or six guns, to sink twelve boats, the boats

will get in. As for a place with three 6-prs., we might just as well not worry at all, but go to bed.

NOTE.—Since writing the above, I have been credibly informed that at certain fortresses the Q.F. defense is assisted by 40-pr. R.B.L's. To anyone not conversant with guns, this would not convey much, but if it were commonly known that we were employing in the defense of harbors guns that were designed in 1859 and superseded by the now obsolete muzzle-loaders, I think even the Chinese would be entitled to smile.—A.E.C.M.

## SKRYDLOFF'S RAID.

(Special Correspondence N. Y. Evening Post.)

\* \* \* \* \*

IN all wars there are bound to be misrepresentations of the other side. We have already had in this conflict violation of the flag of truce, assault upon the Red Cross, mutilation of the dead, rape of women—the whole miserable series of efforts by which one combatant seeks to deal “a monstrous injustice of contempt and scorn” to the other. In the latest accusation, that Skrydloff's men acted with “ferocious cruelty,” there is no truth at all. From a comparison and sifting of reports of officers, privates, and crews it appears instead that the Russians acted with lenity under strange and perplexing circumstances. Arriving at night on June 14th in the fairway which troopships use from Moji to the landing places in Korea and Manchuria, the *Rossia*, *Gromboi*, and *Rurik* next morning sighted the *Sado*, the *Izumi*, the *Hitachi*, and others, which were laden with soldiers, horses, steel rails, ammunition. It is believed that the *Hitachi* carried some of the 200 great siege guns intended for the reduction of Port Arthur.

A sifting of accounts leaves the story of the *Izumi* about like this: The Russians fired a blank cartridge at her. She refused to stop. They fired a shell which struck the transport below the water line abaft, and she at once began to sink. Several of the crew jumped overboard, seeing a fishing boat in the vicinity. The majority, however, lowered four boats and proceeded towards the *Gromboi*, thinking that course would be the safest. Thereupon the *Gromboi* lowered boats to save life and made signals to the *Izumi*'s boats to come, which they did and were taken on board, 108 men in all. The wounded were put into the surgeon's bay and tended. Ultimately twenty-two of the *Izumi*'s people were handed over to the *Unko Maru*, a Japanese merchantman, to be taken to land.

Other transports appeared. The Russians bore down upon them, but some escaped. The *Sado* and the *Hitachi* reversed engines and ran, but were overhauled. A blank shot was fired and they were signalled to stop, but kept on. At a distance of a quarter of a mile or so the *Rossia* sent ten shells aboard the *Hitachi*, disabling her machinery. Then she had a minute's respite while the Russians gave chase to the *Sado*, and during that interval a part of the non-combatants took to the boats. But when the *Sado* also had been disabled, the Russians returned to the *Hitachi*, which declined to surrender, and now opened on her at a distance of 200 meters, “using



shrapnel," the survivors say. Two hundred of the *Hitachi's* people dropped almost at the first discharge.

Up to this time the soldiers had been waiting below, but they now came on deck. Lieutenant-Colonel Suchi burned the records and then disemboweled himself. Captain Hashimoto shot himself, and Lieutenant Nagao fell on his sword. Many followed these examples. About a hundred, not having any weapon at hand, threw themselves into the sea. Among these was Captain Mishima. Thirty got into a boat. The boat reached the *Sado*, which had been disabled, but not sunk. Looking back the men in the boat saw the *Hitachi* torpedoed. She went down stern foremost.

Sergeant Takadoro, who had leaped overboard "in order to hasten death," but who was picked up by a fisherman after the Russians had departed, says he "swallowed as much water as he could," but was unable to drown himself. "From the water as I looked towards the ship, I saw and heard all still on board calling out *Banzai!* in perfect disdain of death."

As for the *Sado*, she too refused to stop when signaled to, and refused to haul down her colors. After receiving fourteen to sixteen shells [Lieutenant Takenouchi's report], she stopped her engines and asked for time to put some of her men into boats. Forty minutes' grace was allowed; 600 took to the boats, and 400 decided to remain with the steamer. An extension of the grace was requested, but the Russians replied that as they were themselves within the enemy's lines further delay could not be granted. They discharged two torpedoes at her, one damaging her engines, and then hastened away. Out of 1,095 soldiers which she was bearing to the seat of war, only three or four are missing. That fact alone disposes of the "ferocious cruelty" accusation, with respect to her, and also of the excited assertions that her "decks streamed with blood" and that the Russians fired only at her upper works in order to prolong the carnage.

To sum up: The Russians took aboard their flagship the 108 men from the *Izumi*, left the *Sado* with only four of her 1,095 injured, but sank the obstinate *Hitachi*, from which 370 escaped, and 895 are still missing.

If any one thinks that in such a record there are *signs of undue severity*, then let him consider the predicament the Russians were in. Their little squadron was some 500 nautical miles from its single haven of refuge, yet only 40 miles away from ports whence, six hours before, a flotilla of torpedo boats and a whole division of armored cruisers, preceded by a wireless-telegraph scout ship, had sailed to circumvent it. One of the enemy's transports was already sunk; two hemmed in, and non-combatants all removed; yet instead of yielding, the men who remained insisted on waiting for death, if not at Russian hands, then at their own. What is to be done with a fairly beaten foe who, refusing quarter, draws a knife and threatens to destroy himself if you press him farther? All the Russians did with such a novel situation was this: They received and cared for the 108 men of the *Izumi* who gave in; allowed all but four of the *Sado's* obstinate 1,095 to go scot free and unharmed; and gave to the *Hitachi's* 1,100 the option of taking to the boats or of sinking with the ship and her munitions of war.

That some 700 chose to perish by shell fire, by drowning, or by harikari, is not to be charged to "Russian cruelty," but to that cruel, uneconomic idea of devotion which survives from a half-barbaric past. Suppose the two unyielding regiments had been on land, similarly



surrounded by a force they were powerless to resist, and still refusing to throw down their arms. Should the superior force break ranks and admiringly retire? If it did not, every member of the two encompassed regiments, according to the Samurai code, would be expected honorably to disembowel himself—which is, of course, an inconceivable absurdity. The code is itself absurd in prescribing suicide as a military duty, for a soldier's value to his country after he has risked and dared all is in living for future service. Taking his own life is rather like quitting; at any rate, one may prefer the Tibetan way of fighting on and on till no one is left standing.

TOKIO, June 22.

F. C.

### THE REORGANIZATION OF THE ENGLISH ARMY

(Translated by Lieut. A. L. KEESLING, A.C., from the "Militär-Wochenblatt," March 10, 1903,  
for the Second Division, General Staff, U.S.A.)

THE long-expected explanation of the reorganization of the English Army has at last been published by the Minister of War. According to this arrangement six army corps shall be organized in the United Kingdom. The main purpose of this is that the first three corps shall always be ready for war, and shall be so stationed that upon notification, they can be immediately sent abroad. The remaining three corps, aided by auxiliary troops, such as militia, imperial-yeomanry, and volunteers shall serve merely to protect the country.

It must be taken into consideration that the regiments, batteries and battalions stationed in India are not included in this statement, but in the usual manner must be relieved by troops from England.

The first three army corps are distributed as follows:

1st Army Corps .....	Aldershot.
2d Army Corps .....	Salisbury Plain.
3rd Army Corps .....	Ireland

The 4th, 5th and 6th Army Corps are stationed in London, York and Scotland.

On examining the statement of the troops belonging to these six army corps it will be perceived that there is many a gap which will have to be filled.

Altogether the first three army corps shall be composed of the following:

Cavalry Regiments .....	15
Batteries of Artillery .....	78
Battalions of Infantry .....	72

Of these there are in South Africa or elsewhere abroad:

Cavalry Regiments .....	4
Battalions of Infantry .....	9

and three Batteries of Artillery seem to be missing entirely.

The 4th, 5th and 6th Army Corps shall be composed of the following:

	Regulars	Auxiliary troops
Cavalry Regiments.....	5	10
Batteries of Artillery.....	53	27
Battalions of Infantry.....	14	61

Of the regular artillery there are at present fourteen batteries in South Africa. The irregulars are actually at hand with the exception of a few batteries, which are to be replaced by standing volunteer artillery.

The 1st Army Corps is complete with the exception of one battalion of infantry, as far as the complement of troops is concerned, but is forced, owing to the shortage of barracks, to provide quarters for several troops belonging to this corps in the district of other corps. Thus there are three battalions and two cavalry regiments, of which some are stationed in London and some in Scotland. For the same reason there are six batteries of field artillery partly stationed in the district of Salisbury Plain and partly in Ireland. There are also three heavy batteries which have lately been organized for which no barracks are provided.

The first Army Corps is arranged as follows:

	Entire Corps	No. stationed in corps district
Cavalry Regiments.....	5	3
Artillery Batteries, Horse.....	3	3
Artillery Batteries, Field.....	21	15
Artillery Batteries, Heavy.....	3	..
Battalions of Infantry.....	24	20

Conditions are less favorable with the 2d Army Corps. For three of the regular cavalry regiments belonging to it there are at present no accommodations and the same is true of one of the horse batteries. Also six battalions of regular infantry are altogether missing.

To this army corps irregular troops are attached and the total number of troops belonging to it are as follows:

	Regular	Militia	Aux. Imp. Yeomanry	Volunteers	
Cavalry.....	2	..	13	..	Regt.
Artillery.....	45	43	..	129	Batt.
Infantry.....	20	15	..	35	Battlins.

There is absent from the 3rd Army Corps one cavalry regiment, one of the horse batteries is stationed in the district of another command, three field batteries (militia) will be organized this year, and the three heavy batteries which according to the plan should belong to this corps are not in existence; besides this there are two battalions of infantry lacking.

The strength of this corps shall be:

Cavalry Regiments.....	5
Batteries, Horse.....	3
Batteries, Field.....	21
Batteries, Heavy.....	3
Battalions of Infantry.....	25

Whereas with the irregular troops it counts:

	Regular	Militia	Imperial Yeomanry	Reg'ts. Batt. Batt'l.
Cavalry.....	..	..	2	Reg'ts.
Artillery.....	2	..	..	Batt.
Infantry.....	20	28	..	Batt'l.

The 4th, 5th, and 6th Army Corps shall contain each the equal number of regular troops of the various branches but the following tables will show that here also is many a gap:

4TH ARMY CORPS.				
	Regular	Militia	Imperial Yeomanry	Volunteers
Cavalry.....	4	..	..	Reg'ts.
Artillery.....	22	12	..	Batt.
Infantry.....	8	25	..	Battlins.

5TH ARMY CORPS.				
	Regular	Militia	Imperial Yeomanry	Volunteers
Cavalry.....	1	..	18	Regts.
Artillery.....	19	29	..	Batt.
Infantry.....	4	43	..	Battlins.

6TH ARMY CORPS.				
	Regular	Militia	Imperial Yeomanry	Volunteers
Cavalry.....	..	..	5	Regts.
Artillery.....	5	30	..	Batt.
Infantry.....	2	13	..	Battlins.

But the establishment of the 5th and 6th Army Corps is at present not an established fact.

The entire strength of the regular army shall be:

Cavalry Regiments.....	21
Batteries of Artillery.....	131
Battalions of Infantry.....	86

The present strength is:

Cavalry Regiments.....	16
Batteries of Artillery.....	111
Battalions of Infantry.....	77

It must be understood that every five cavalry regiments form a brigade and that the first cavalry brigade is attached to the 1st corps, etc. At present nothing is known about the disposition of troops of engineers and wagoners.

At first glance the new plan seems to contain many improvements in the division of the English forces; but on paper many a thing looks better than investigation shows it to be. Of the first three army corps supposed to be ready for war, there is only the first complete, i.e. on paper. The other two contain irregular troops, which are not always ready for foreign service. Some of the other troops (army corps), especially the 5th, show a considerable strength of artillery, but the so-called volunteer batteries have an armament of obsolete guns or none at all. One can place little dependence on volunteers, as their men only occasionally attend the weekly drill and can scarcely be considered developed material. The regular troops consist of recruits for the greater part. The reaction of war has recently influenced recruiting; the recruits are not of the best and it seems hard to make up for the continual discharge of time-expired men.

In matters of administration, if sufficient liberty of action has been granted to corps commanders the new arrangement has a decided advantage over the old system. But many things seem still not clear; and the reciprocal action between the army and navy does not seem to be sufficiently secured.

As mentioned before, the English troops in India are not included in this plan and the expenses of these fall to the burden of the Indian Governments.

The larger colonies are responsible for their own troops. There are besides in other dominions protective forces maintained at the expense of the English Foreign Office. Everything figured, the expenses amount to over 50 million pounds, of which 30 millions is for the standing army in the United Kingdom alone (including expenses of auxiliary troops).

Whether or not these expenses will be any advantage is a question which only time will tell.

*(The United Service Gazette.)*

#### MR. ARNOLD-FORSTER'S PROPOSALS.

In the House of Commons, on the 14th (July, 1904), on the War Office vote of £331,000 Mr. Arnold-Forster unfolded his scheme for the reorganization of the Army. In his opening sentences he invited the co-operation of the Opposition, and he then went on to say that the Army was going through a period of great danger, which meant that the country was in a similar plight. As the Committee knew, the Government had recently taken steps to ascertain the real military needs of the Empire through the agency of the Committee of Defence, and greater progress had been made toward the elucidation of the problem than was made in the twenty years before the formation of the committee. Much had already been done in the direction of decentralization, and this reform was to be extended very largely. The personnel of the Intelligence Department had been doubled. By these changes it was hoped to remedy some of the evils on which the War Commission dwelt. But the report also showed that our Reserve was not what it purported to be, and that it was, in a measure a substitute for an army, or rather its first line. This meant that we could not send away an effective force to hold the field on the first sign of danger, a state of things which must be rectified. He proposed to reduce the cost of the Army by reductions in its numbers. He suggested that fourteen battalions of the line and five of the garrison battalions formed at the beginning of the war should be gradually absorbed. The other part of his scheme was to divide the infantry of the Army into two parts, and to keep certain battalions at home on the home establishment. These battalions were each to be reduced to 500 men, of whom 100 would be general service soldiers, and the remainder short term soldiers enlisted for two years, who would afterward join the Reserve for six years, coming up for training every third year. These battalions were to be really territorial. Special arrangements were to be made to attract young officers. The linked-battalion system would be done away with, and large depots, like the Guards', would be established. A striking force of 15,000 or 16,000 men would be maintained at Aldershot, ready to take the field at a moment's notice. The number of cavalry regiments was not to be altered, nor was a battery of the Royal Artillery

to be touched. Turning to the militia, he said that the present condition of this constitutional force was very grave. At present the line was living on the militia. In the autumn he intended to consult with militia officers as to the expediency of transforming about seventy militia battalions. His main object was to raise the standard of the militia as well as of the line, and units which were redundant or which were incapable of recovering the ground which they had lost ought to be cut off. He asked the volunteers, as well as the Army and the militia, to submit to a sacrifice of numbers, and his proposal was to reduce the establishment to 200,000 men. He desired, at the same time, to give a larger grant to the volunteers. An annual sum would be put at the disposal of rifle clubs, and a sum would be set aside to enable the volunteers to provide themselves with transport. The economy effected by his reforms would be very small next year, but afterward it would be progressive. He hoped that there might be a reduction of expenditure on the work of submarine mining now carried on by the Royal Engineers. The linked battalion system, he explained, would continue to exist for the purpose of exchange, but not for the purpose of drafting. \* \* \*

Mr. Arnold-Forster, replying to questions which had been put to him, explained that the object of some of his proposals was to enable the authorities to keep a larger number of color men abroad than at home. He wished to maintain the Indian garrison as it stood, to retain only twenty-six battalions in the Colonies, and to have twenty-six battalions of general service troops in this country. There would be a reserve, roughly speaking, of 23,000 men for the general service battalions, and of 87,000 men for the short service battalions, if he was allowed to incorporate with them a certain number of militia regiments. By striking off fourteen battalions of the line he would save £810,000, and by abolishing five garrison battalions he would save £530,000. In other ways he hoped to save £954,000 and £100,000. Further reductions would be possible in the future.

## GERMAN CAVALRY STEEL PONTONS.

(From the European Edition of the N. Y. Herald.)

THE military journals announce that at the forthcoming autumn maneuvers the new cavalry bridge plant will be supplied to several regiments in place of the unpractical folding-boat outfit used up to the present. The six-horse folding-boat wagon will in each case be replaced by two four-horse wagons, each carrying two half-boats of steel tin, three pontoons, four "tabliers" and two supports, besides rails, anchors, rudder, stakes, cables and clamps. Each wagon will also carry a certain portion of the mining ammunition of the regiment and one day's rations.

The outfit is such that it will suffice for the construction of a one-meter-wide approach, a two-meter-wide flying bridge or a three-meter column bridge. The half-boats can be put together, and two such boats with four "tabliers" will cross a ford of sixteen square meters. The new metal boats are a great improvement upon the old canvas folding boats, and the new pontoon service has the advantage of being more transportable and easier to handle than the old one.



It is generally considered that cavalry so provided will be more independent and able to dispense entirely with pioneers.

\* \* \* \* \*

[The above invention is fully described and illustrated with plates in a pamphlet recently issued by the Second Division General Staff entitled "Instruction for Use of Steel Pontons and Half-Pontons for Cavalry," from which the JOURNAL makes the following extract.—EDITOR.]

"This material is intended only for cavalry service and forms part of the equipment of each cavalry regiment.

"Each cavalry regiment has at its disposal four steel half-pontons with their regular appurtenances, all of which, for each set of two half-pontons, are loaded upon one ponton wagon of special construction.

"The equipment is as follows:

FOR ONE WAGON		FOR ONE REGIMENT
2	Steel half-pontons, 118 kilograms. . . . .	4
3	Saddle pieces, 3.45 meters. . . . .	6
4	Flooring panels, 4 m x 1 m. . . . .	8
2	Sleepers. . . . .	4
3	Stanchions (for railing). . . . .	6
1	Anchor. . . . .	2
6	Oars. . . . .	12
6	Oar locks. . . . .	12
4	Boathooks. . . . .	8
2	Anchor ropes. . . . .	4
8	Railing ropes. . . . .	16
4	Lashings. . . . .	8
6	Stakes. . . . .	12

#### DESCRIPTION OF MATERIAL.

"1. *The Steel Half-Pontons.* (Plates 1 and 2.) This is made from steel with a high percentage of nickel. The pointed end of the half-ponton is called the bow. The angle of the bow is called the stem. The end of the half-ponton opposite the bow is called the stern.

"The framework of the ponton consists of steel ribs upon which the skin plating is riveted.

"A strip of wood is worked around the upper and outer edge of the half ponton to form the gunwale.

"There are holes in the gunwales to receive the oar-locks, and others to receive the tenons of the saddles and the stanchions of the railings.

"On the inside of the bottom of the boat are placed two cavils, one near the bow and one near the stern, to which the anchor ropes may be fastened, after the assembling of the two half-pontons.

"The skin of the boat, which is of sheet steel, is protected on the outside by three wooden battens worked lengthwise along the bottom, and on the inside by five wooden battens similarly placed along the frame. Besides these, two bales of wood are worked along the outside of the boat lengthwise as fenders, and serve also as supports for the other half of the boat when the two are loaded,



*A. Limber chest with supplies for wagon, etc.*

*B. Bridge material.*

*C. Chest containing explosives, small supplies and repair kit.*

SIDE ELEVATION.

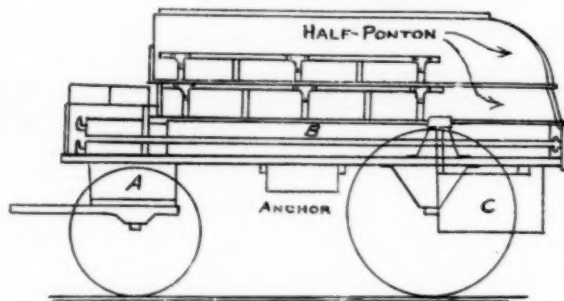
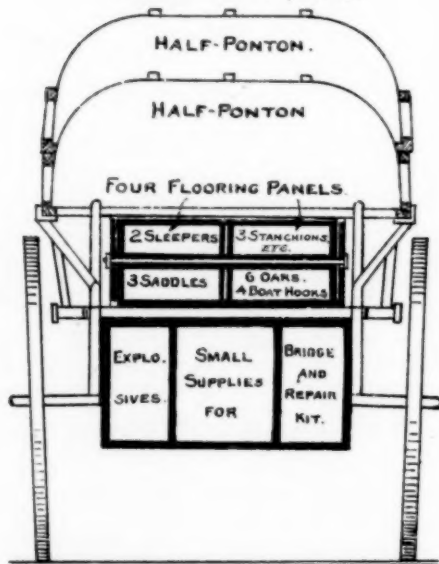


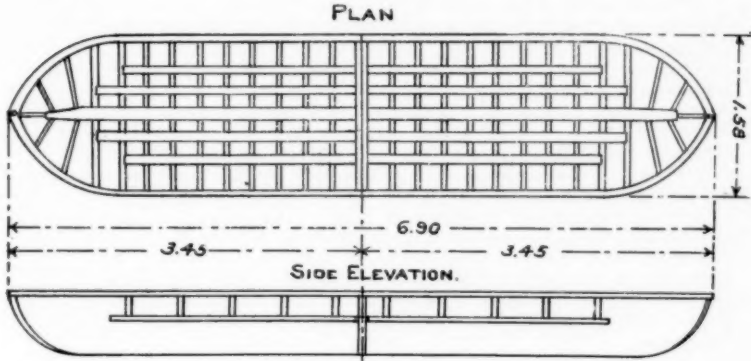
PLATE 5.

REAR ELEVATION.



PONTON WAGON LOADED.

one above the other, on the ponton wagon (see Plate 5). In addition also for the purpose last mentioned, there are five small braces worked between the gunwale and the waling strip on each side of the half-ponton, each \* brace being provided with a hook, which



PONTON, ASSEMBLED FROM TWO HALF PONTONS.

## PLATE 2.

helps in securing the half-ponton to the wagon and in securing the flooring to the boat when the bridge is constructed.

"The two half-boats are assembled by means of a hook and eye (Plate 1) on the outside of the transom, forming the stern of the half-ponton, and are secured also by lashings passed around the cavils in the bottom of the half-boats. The parts can be assembled on land or in the water."

\* \* \* \* \*

## THE VICTOR OF WATERLOO.

(*London Chronicle.*)

THE anniversary of Waterloo, which was fought on Sunday, June 18, 1815, calls up the memory of the mighty hero of that day, Arthur Wellesley, Duke of Wellington. As a token of the nation's gratitude, he was given Strathfieldsaye, to be possessed by him and his heirs forever. In this residence, more than sixty years ago, Sir George Hayter (then unknighthed), the court painter to the late Queen Victoria, was invited to stay. The artist was then busy on his State picture, "The Marriage of the Queen," and the duke had promised him sittings for the portrait, which afterward appeared in this picture.

\*Sic in the text. The plates indicate the hooks on alternate braces only.

The following extracts are from Sir G. Hayter's diary, and give a little insight into the duke's home life. They are now published for the first time:

"May 29, 1841.

"I left London by the railroad to Reading at 8 A.M., arrived at Reading at twenty minutes past nine, took a conveyance to Strathfieldsaye, nine miles, arrived there by half-past ten.

"I was then shown into a very pretty library, the walls being covered with engravings, stuck on the walls without glasses, and having a little border of lighter shade, to answer as a rim round them. Here the Duke of Wellington came to me, and received me most kindly. He showed me through the suite of rooms, and he pointed out to me all the pictures and prints he thought most interesting. In admiring the whole-length portraits, he never failed to remark their great excellence was a small head. He showed a fine portrait of the Queen Catherine of Aragon, wife of Henry VIII, very like Bloody Queen Mary; and another by Rubens, as he said, but I believed it a Vandyke of Donna Isabella, who was the Queen that, when Ghent was besieged, vowed to wear her clothes till it was reduced, which circumstance brought them a tint called now 'Isabelle' in France.

#### THE DUKE'S PLEASURE IN HIS COUNTRY SEAT.

"The duke said he liked the house better than any house in England, that he had done everything which he could to make it perfectly comfortable; he then took me upstairs to my bedroom, which he took me to, and pointed out the beautiful view from it, saying, 'What fools people are to remain in London at this season!' He showed me my servant's room, hoped I should be comfortable, and then explained the direction of the gallery and staircase. Soon after this he ordered my breakfast, came and looked that all was right, and after walking me round the conservatory, he left me. Soon after this, his nephew, the Rev. Mr. Wellesley, came. The duke introduced us, and then I found that we were all going out. We went through the rooms again first, however, and he pointed out to me the engraving from my portrait of her Majesty in his own room. We then went to the Hall and mounted a very pretty fore and aft shandrydan car with two Shetland ponies. The duke got up and took the reins, called me to sit on his right; he liked driving from the left side. We went five on the car, the duke, Mr. Wellesley, a builder, myself, and a groom.

"After returning he gave me two sittings for the drawing I am making for the marriage of the Queen, of him. He slept and dozed every five minutes, then talked of the small heads in ancient portraits.

"At dinner he seated me on his right hand, and was very kind in seeing that we had enough to eat, but he forgot to think of passing wine after dinner, so it stood still, and we, *i.e.* Mr. Lucas, a young painter, the Hon. Rev. Mr. Wellesley, and I got only one glass of claret each after the removal of the cloth; but the duke talked of art, and admired Tintoretto as the greatest painter of antiquity, as he said, before Raffael, for Tintoretto, he observed, was the best draftsman of the human figure. I said, 'I could not agree, but that Tintoretto was a great composer and a most imposing artist, full of great genius, and of a most daring and inventive talent.' The duke persisted in his having been the best draftsman who has ever lived,

and said, 'I don't understand composition.' It was easy to perceive that the vast canvases covered by Tintoretto had imposed on the duke's mind, by their size and the ordinary bustle of his works; 'tis true his figures, as the duke said, were generally in true action, that the spectator always knew what each figure was intended to be doing, which, in many religious compositions of the Great Masters is not the case, as too frequently a legitimate balance of composition in altar pieces and sacred works of the class of Holy Families, accompanied by two or three devotees (heads of convents and monasteries) would scarcely guarantee actions other than homage.

WELLINGTON AS CLERK OF THE CHAPEL ROYAL.

"He afterward amused us very much by an account of his attending divine service in London always at eight o'clock at the Chapel Royal, that he never found more than the officiating priest and a sort of Abigail, and that he, the duke, always acted as clerk; that he uniformly went through all the responses with a loud voice, even to the Amen. He said, 'I suppose if the people of London knew that I, his Grace, the Duke of Wellington, regularly attended as clerk at the Chapel Royal every Sunday, they would at last not leave room for me even to get in,' appearing quite aware of his own great popularity, at the same time recognizing in himself the humble Christian who goes to pray and who is willingly clerk in an empty chapel! Though thought of by the multitude as the Great Duke, he seemed, at the moment of his recital, to think that was a title made to be lost, and more useless to him than the high devotion he appeared to cherish for his Creator."

"May 30, Whit Sunday.

"At breakfast very little was said. The duke said: 'Church at eleven close by; lunch if you like, and dine at six.' Then he appointed that he would sit to me after church. He slept soundly at church; the heat of the day and the walk had overcome him. He remained to take the sacrament. During the sitting he said: 'There are two subjects which ought to be painted, and I should like to see it done well. I think the one a great moral lesson. We are informed that all the animals of the creation had been created for our use, but we don't know how to reduce some of them to obedience; the lion, the royal tiger, the hyena, and others, but Van Ambourg has effected this; what I want Landseer to paint for me is Van Ambourg; he is a fine, athletic man, surrounded by the animals he has so well known, not only how to render obedient to himself, but also to live in peace with each other—Van Ambourg standing upright, a fine figure of a man, with these animals lying around him, and the lamb at his feet, for he places the lamb between the lion and the tiger, and they dare not touch it. This is not all you see. In an adjoining cage these ferocious beasts are together, not injuring each other. This is education, this is the great moral lesson.' Then he lamented that Edwin Landseer's health had not permitted him to paint this picture for him, and repeated the description of Van Ambourg's prowess.

"The other subject,' he said, 'is one which I believe has never been painted—my entry into Madrid. It is a fine subject, and one of great importance. We had just fought the battle of Salamanca, and had been waiting to see what the enemy would do, when in the night before my entry some of our people had a brush with the enemy's cavalry, and we lost several men, but I believe some fellow

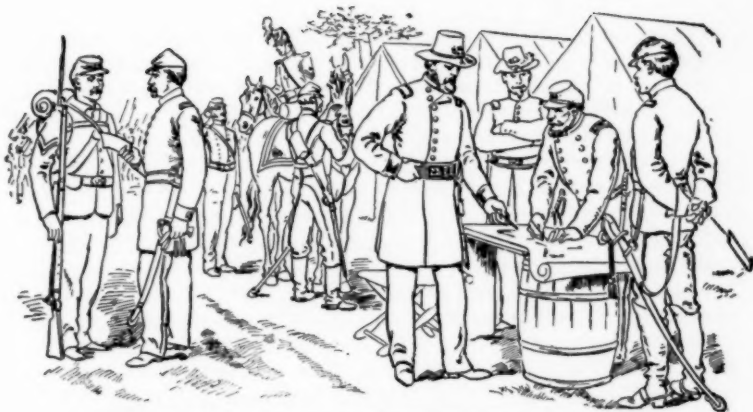
had gone over and informed them of our position, for the Germans behaved well, very well, but the Portuguese ran away. However, there was Madrid to be stormed. If I did not take possession, as the harvest was not yet got in and the people could not stir, the French would have got it or destroyed it. So I determined to enter. This is the subject for some man of talent; it ought to be done. I shall never forget the joy, the enthusiasm of the people. They nearly pulled me off my horse, kissing my hands, pulling my coat, cloak, and stirrups, and passing me from one to another. I was obliged to tell 'em they'd have me off! But it was the finest sight I ever saw. People who had not dared to come out of their houses for a long time now met their relations, whom, perhaps, they thought dead; others went in with me, and the meetings were joyous indeed. There you might have seen the common people, with their short jacket and breeches, buckles on their shoes, and the little net cap, and others with cloaks, and all the women very gayly dressed. I remember the old friars and priests, too, were all out to meet me; it was a fine sight. We entered at the northeast gate, which would show we came from Salamanca. Yes—it ought to be painted, and ought to make a fine picture. They'd have been all starved if I had not done it."

"May 31.

"The duke sat; he approved the portrait, and wrote his name on it. Signor Marochetti, a sculptor, arrived. We went to a tile kiln to get some clay. The duke gave me his hand kindly on my taking leave."

Thus terminated Sir G. Hayter's pleasant and interesting visit. Eleven years later the great duke died (September 14, 1852).





## Comment and Criticism.

### "Remarks upon the New Tactics—Cavalry."

Major Edward J. McClernand, General Staff.

An article appears in the current number of the JOURNAL OF THE MILITARY SERVICE INSTITUTION in which the following statement is made:

*"The Cavalry.* This arm, it is claimed, has become valueless on the field of battle, because the horse, unlike the gun, does not improve. It has not, however, lost its technical value in speed, in surprise, in flank, and in rear attacks. It is worthless against broken infantry and it must be kept further back." (Page 189 this JOURNAL.)

The opinion expressed above is that of an officer who has had a varied experience, during nearly half a century's service with the colors, and it is therefore entitled to respectful consideration. It is believed, however, that the nature of this officer's service, wholly in the foot, disqualifies him somewhat from fully appreciating all the capabilities of the mounted arm. An officer, naturally, gives most of his attention to his particular branch of the service. There are many who, from a study of the campaigns in which our veteran was engaged, or who in reasoning from experiences similar to his, have reached different conclusions. The following, it is thought, fairly represents the cavalryman's view.

The great extension of field operations in modern warfare, resulting in part from throwing the cavalry far to the front in search of information and to screen the movements of other troops, and due also in a large measure to efforts to break the railroad communica-

tions of the enemy at a great distance from the main army and, perhaps, in several directions, as well as the extension of the battlefield incident to the increased range of small arms and field guns, leads to the belief that an army should contain a greater proportion of mounted men than formerly. This was the opinion of the ablest officers of the English service, Lord Roberts included, who appeared before the Royal Commission convened to report on the South African War. The effective use the Germans made of their cavalry in 1870 further emphasizes the importance of this arm, and without detracting in the least from the credit due to other arms it can be justly claimed that the history of the War of the Rebellion makes the importance of the dragoon so plainly evident that the most casual student of that great conflict must be impressed therewith.

Non-military persons are prone, when speaking of cavalry on the battlefield, to picture heavy masses of horsemen dashing headlong on well-formed infantry, or on the front of a modern battery belching forth its deadly missiles. No one recognizes better than the American cavalry officer that such charges are not practicable; that the riding down of unbroken infantry belongs to the past, together with much of the hand-to-hand fighting in which infantry formerly engaged. Those who think of cavalry as engaging only in mad and hopeless charges fail to grasp the true spirit and hope of the American dragoon. They forget the vitally important part played by John Buford and his patriotic and heroic men in holding Lee at bay until Meade's infantry could reach the superb defensive position at Gettysburg that the great cavalryman's eye so quickly detected, and which he so fully appreciated. They forget the withdrawal of the Confederates from Petersburg, and how Grant's infantry pressed on with the consciousness that the war could be terminated then and there if Lee, with his shattered yet unconquered legions, could only be halted long enough for them to come up. Then once more our dragoons threw themselves across the path of the Army of Northern Virginia, and Appomattox followed. After such brilliant feats of arms it would seem that no one would question the importance to this country of maintaining a numerous, well armed and a thoroughly trained corps of mounted men. Unfortunately, however, there is reason to believe the dragoon should be on his guard. There are those who desire to build elsewhere at his expense, and they have powerful political support. They should not be permitted to have a walk-over.

Turning from accomplished facts to a study of the future, it may be pointed out that a good reason for maintaining the cavalry and field artillery in time of peace above their proper tactical relation to the infantry, is found in the fact that late legislation contemplates combining the National Guard with our Regular Army to form the first line of defense. The question of expense has practically deter-



mined that cavalry and field artillery be maintained by the general government, and thus the assistance to be had from the Organized Militia will be mainly in the shape of infantry. With a hundred thousand National Guard troops and our thirty regiments of regular infantry, the present organization of our cavalry and field artillery into fifteen regiments and thirty batteries, is none too great.

Again, the increased power of the defensive, due to the great increase in the range of the modern rifle, will result in thin lines doing the fighting. An army now occupies a much greater space in battle formation than formerly. It will be comparatively easy for either force to hold its line and repulse a frontal attack, and hence rapid flanking movements will enter largely in the battle tactics of the future. What troops are better suited to such work than the American dragoons? If other nations possess better soldiers of his class, their history has yet to be written. There is no more reason to rule the dragoon off the battlefield because he finds transportation in his horse, than there is to rule a battery off because horses draw the carriages. Moreover the great extension of the battlefield, resulting from improvements in firearms, will transfer some of the flanking or turning movements mentioned above from the sphere of tactics to that of strategy, where rapidity of action may be essential to success, as, for example, at Five Forks.

It should not be forgotten that in movements far to the front or to rear of the infantry, our cavalry must expect to meet the enemy often. It may be that only the enemy's cavalry will be encountered and circumstances will decide if the action shall be mounted or dismounted. Perhaps hostile infantry may also be met, and then our dragoon with the help of the batteries attached—the latter rendering, it is hoped, as efficient service as they did on the many fields in Pennsylvania, Maryland and Virginia—must work out his own salvation and accomplish his mission without the aid of our infantry.

What is meant when the assertion is made that cavalry "has become valueless on the field of battle?" Is it meant that there will be no battlefield except where infantry engage? Is it meant that our cavalry should not be prepared to meet with the "*arme blanche*"—the horsemen of the enemy? Is the answer to be found in the fact that those who thus assert, fail to fully recognize that the dragoon fights dismounted as well as mounted? The American cavalry were so trained, that without additional instruction, they fought on foot at Santiago, and their record there will not suffer by comparison with any.

It is desired to state here, with all possible emphasis, that our dragoon will be found ready, when war comes, to dismount and aid his brothers in the infantry to carry our flag to victory or to stay the enemy in his advance. He will frequently engage in battle, mounted and dismounted, when our infantry is miles away, and in either event

it is confidently believed he will render as good an account of himself as he did at Santiago.

Let our infantry, artillery and all corps and departments get whatever is needed to place them on a high plane of efficiency. Let all of us aid one another in this work and cease to squabble among ourselves and to attempt to belittle the importance of each other. In a perfect army each of the existing arms, corps, and departments has its proper mission, and if either be neglected, all will be injured thereby.

Finally, the assertion that cavalry "is worthless against broken infantry" cannot be accepted. No country in any age has possessed better infantry than that which followed Gordon in Lee's army. If any one doubts Gordon's fighting qualities he has only to read the history of the bloody fields where Lee fought, and notably that of Antietam. At Cedar Creek Gordon's infantry, flushed in the morning by victory, was overwhelmed before sun-down by defeat. In his reminiscences of the Civil War after describing how regiment after regiment, brigade after brigade—in rapid succession—was crushed, he says: "As the tumult of battle died away there came from the north side of the plain a dull, heavy swelling sound like the roaring of a distant cyclone, the omen of additional disaster. It was unmistakable; Sheridan's horsemen were riding furiously across the open fields of grass to intercept the Confederates before they crossed Cedar Creek. Many were cut off and captured. As the sullen roar from horses' hoofs beating the soft turf of the plain, told of the near approach of the cavalry, all effort at orderly retreat was abandoned. The only possibility of saving the rear regiments was in unrestrained flight—every man for himself." A little later Gordon finding himself near the edge of a precipice endeavored to rally some fragments from all parts of the army, but he quickly realized that, because of the advancing troopers, capture of himself and his men was imminent. He shouted to the latter to escape if possible in the darkness. How he personally escaped we will tell in his own words: "Wheeling my horse to the dismal brink, I drove my spurs into his flank and he plunged downward and tumbled headlong in one direction sending me in another."

When disaster such as Gordon describes overtakes an army, it matters not what arms are in the hands of the scattered troops—one idea takes possession of all, be they on a plain or on the brink of a precipice—that one idea is *flight*. Let the American cavalrymen, watching the field from his horse, seize this fleeting moment and see to it that the beaten foe never rallies.

**"Is there Necessity for a Second West Point."****A Graduate of the Military Academy.**

I agree with Professor Tillman that the future needs of the army will require the training of more cadets than are now trained at West Point and that the topographical conditions and the requirements of discipline are both seriously opposed to a further increase in the number of cadets at that school; but I believe that a remedy for these conditions can be found that will not destroy the unity of that institution or lessen its influence in maintaining a fine *esprit* in the army at large.

In those countries where there are several cadet schools maintained by government it is generally conceded that we derive great advantage from having only one. They recognize that the common knowledge acquired and the friendship formed at the cadet age, while living on terms of absolute equality and under such trying conditions as obtain at West Point, do much in after-years to secure that mutual understanding and harmony in action between the various parts of the army that is essential to success.

If the course of instruction at West Point were rearranged so as to include only those things that *every* officer needs to know, or if it were carried only to the point where the process of specialization should begin, it would not cover more than three years; and with only a three years' course enough cadets could be trained to meet the demands of the future without increasing the number present at any one time beyond the five hundred limit.

Moreover, if the method of training that has proved so successful at West Point in forming character and habits is rigidly carried out are not almost all the benefits derived from it attained by the end of the third year?

Let all cadets, then, be sent to West Point for three years to be put through the melting and molding process, and then let them be passed on to another institution where the discipline could be relaxed and where the facilities for specializing could be better than they are or can be at West Point.

This school should be a cadet school, and not an officers' school, and its function should be to educate rather than to train. The military status of these students should be intermediate to that of the West Point cadet and the commissioned officer and the discipline should be sufficiently relaxed to permit those "to go to pieces" who have only been held together by the West Point environment, for it is easier and better to eliminate a few at this period than it is after a commission has been issued.

The length of time to be spent at this supplementary school must depend upon the amount of knowledge, in addition to the West Point course, that should be acquired by the aspirant for a com-

mission before he is fully prepared to enter upon the duties of an officer in the particular arm of the service for which he is destined—perhaps a year for infantry and cavalry (and field artillery should then become a separate arm) and two years or more for the scientific corps.

**"A Suggested National Organization of the Militia."**

**Major C. E. Lydecker, N. G. N. Y.**

After a perusal of this article it appears to be proper to refrain from comment upon the process by which this "national organization" is to be accomplished, since the author, wisely perhaps, refrains from any explanation of the method he advises or conceives to be possible. He says, "Nearly all who have planned an organization of the National Guard as a whole have provided in that plan for supposititious organizations," and I fear the Five Militia Reserve Corps, with their respective divisions and brigades, herein proposed are no less supposititious. Our inventor has no intention of disturbing the several regimental, cavalry, artillery, signal and hospital organizations which have grown up like Topsy in various localities, founded upon an innate love of military service, which, under favoring conditions, will stimulate the energy of the youth of the land and their patriotism, and lead them to devote time and money to military training and service.

What, then, is proposed to be gained by having the State troops of New York, Connecticut, Massachusetts, New Hampshire, Vermont, Rhode Island and Maine compose the First Militia Reserve Corps? Under what United States general shall the several major generals commanding the three divisions serve? Who will compose his staff? What will be the duties of this headquarters? How can this be a peace organization in the nature of a reserve army? These questions are unanswered.

Our inventor says we now have State troops (which he enumerates), and adds, "suppose we regard them as composing brigades, divisions," etc.

The only answer is, Suppose we do, what then? Are the State troops of Connecticut to be supported by this new organization? Will Connecticut be able to disband a regiment, or will the new organization have that power? Is the "First Militia Reserve Corps" a State or a national, a militia or a U. S. A. corps? All these matters being left for later solution, the bald suggestion of grouping by locality may be regarded as a satisfying thought, but not the creation of an army. Is it a practicable step in that direction?

The States which foster militia organizations accomplish great results by preparing intelligent men for service in time of war. To

have those men so successfully organized as to constitute an army under national management in time of peace would seem as yet not feasible, for the reasons which the author so well describes. Hundreds of young men serve in militia organizations who have no time to attend to the details of staff or line duty which an army organization requires, and they can not meet the requirements of regulars who may be placed at intermediate points in such an army, because they are not in the business. Why, then, call such a grouping of the State troops an army?

The author's suggestions may be very beneficial in the direction of inducing effort in the Militia Bureau of the Army to secure State action in these several adjacent territories, whereby having regard thereto their troops can be eventually united as occasion presents and requires so as to make up into balanced military forces.

If the law were enacted by which the War Department created the First Militia Reserve Corps herein suggested (for example), the details of such enactment would radically modify the theory of State troops which now obtains, and the time therefor is apparently not yet opportune.

#### Chronology of the Siege of Port Arthur.

January 30.—Order received from St. Petersburg to make "observation movement." Fleet takes three days to clear entrance to harbor.

War-ships are the battle-ships *Retvizan*, *Peresviet*, *Tsarevitch*, *Sevastopol*, *Pobieda*, *Petropavlovsk* and *Poltava*, and the cruisers *Diana*, *Pallada*, *Askold*, *Novik*, *Bayan* and *Boyarin*. The *Variag* had gone to *Chemulpo*.

There were four gunboats and a large number of torpedo-boat destroyers and torpedo-boats.

February 2.—Preparations of Russians reported to be completed and ships stationed in the roadstead.

February 8.—Midnight attack by torpedo flotilla of Admiral Togo's fleet. The *Tsarevitch*, *Retvizan* and *Pallada* seriously damaged.

February 9.—Bombardment. The *Poltava*, *Askold*, *Diana* and *Novik* struck.

February 11.—Russian mining ship *Yenesei* sunk by accident; ninety-six men lost.

February 14.—Attack by torpedo-boat destroyers at 3 A. M. in snowstorm. The *Boyarin* torpedoed by the *Hayatori* and sunk.

February 24.—Attempt to "cork" harbor entrance by sinking steamers partially successful.

March 10.—Fourth bombardment. Russian destroyer captured and sinks.

March 22.—Fifth bombardment. Russian squadron lies under forts. Lieutenant *Krinilsky*, with destroyer *Silni*, engages six Japanese boats.

- March 26.—Town reported tranquil, garrison increased, food for a year and bands playing on the promenade.
- March 26-27.—Sixth attack. Attempt to block entrance with ships loaded with stones fails, vessels being run on shore, but not in desired position. Commander Hirose killed.
- April 13.—Great battle off Port Arthur. Battle-ship Petropavlovsk strikes mine and sinks, with Admiral Makaroff, the artist Verestchagin, chief of the staff, and 750 officers and men. Grand Duke Cyril saved. The Pobieda disabled and torpedo destroyer sunk.
- May 5.—Sixty transports, convoyed by twenty torpedo-boats, reach Pitse-Wo and disembark army for siege of Port Arthur.
- May 15.—Admiral Togo loses battle-ship Hatsuse and cruiser Yoshino.
- May 20.—Japanese cruiser Akatsuki, struck by shell, loses officer and twenty-four men.
- May 26-27.—Battle of Kin-Chow and Nanshan. General Stoessel forced to retreat from peninsula's neck to the perimeter of fortress.
- May 30.—Japanese occupy Dalny.
- June 4.—Russian gunboat strikes mine, and sinks with total loss.
- June 14-15.—General Stackelberg, advancing to relief of Port Arthur, driven back at battles of Wafangkau and Telissu by General Oku.
- June 23-24.—Battle off Port Arthur. Sortie of Russian fleet fails, and ships return to harbor. Admiral Togo's report of ship sunk not confirmed.
- July 10.—Torpedo attack repulsed by heavy fire. Japanese ascend Kinsan Heights and establish batteries.
- July 22.—Commissariat and all guns for the Fourth Army landed at Dalny. Garrison on full rations, three pounds of bread daily. Fifth regiment of 2,000 reduced to 800 men since investment began.
- July 25.—The torpedo-boat destroyer Lieutenant Burukoff destroyed, after successful run to Niu-Chwang and return.
- July 26-27-28.—General Stoessel reports repulse of all Japanese attacks. Russian loss, 1,500 men and 40 officers killed and wounded. Japanese loss put at 10,000. Sortie and damage to Japanese cruisers.
- July 30.—Japanese capture Wolf's Hill six miles north of town.
- August 1.—Sortie of Russian torpedo flotilla.
- August 6.—Reports of constant firing and capture by the Japanese of the last of the outer defenses on Wolf's, Green and Christ Hills, north and east of the city.
- August 8.—Japanese land troops in Louisa Bay, on west of city.
- August 9.—Japanese said to have sixty guns on Wolf's Hill.
- August 10.—Russian fleet makes dash for open sea. Togo pursues and all-day battle ensues. Russian fleet dispersed, with Tsarevitch seeking asylum at German port of Tsing-Chou, others at Chefoo and Woo-Sung. Cruiser of Pallada type torpedoed and sunk. Majority driven back into harbor.



## Reviews and Exchanges.

### Gunpowder and Ammunition.\*

**L**IEUT.-COL. HENRY W. L. HIME'S book, "Gunpowder and Ammunition," has been sent me to read and review. I have read the book with pleasure and from it have derived much valuable information, as others may do who are interested in this subject.

It is a book of about two hundred and fifty pages, admirably compiled from authoritative sources, and while translations are given, there also will be found the original matter.

It is the author's purpose to show, and in no dubious manner, who was the original discoverer (if not inventor) of gunpowder, and he gives the credit for this discovery to the persecuted English monk, Roger Bacon, who was born in Ilchester, in Somersetshire, in 1214, and died about the year 1294. So that it would appear that Bacon was indeed the discoverer of an explosive which revolutionized the art of war and affected every institution. Colonel Hime shows how Bacon refined the crude saltpeter, and after mixing it with sulphur, claimed that he had found "something" which, combined with these two, gave to the compound the properties which attach to gunpowder. This "something" we now know was charcoal.†

It was about the latter quarter of the thirteenth century that this discovery was made, but many supposed that saltpeter and

\* *Gunpowder and Ammunition.* By Lieut.-Col. H. W. L. Hime, late Royal Artillery. London. Longmans, Green & Co., 1904.

† Roger Bacon was, as Colonel Hime has it, the possessor of many secrets, which he would not publish because "he believed scientific knowledge to be hurtful to the people." "The crowd," he says, "is unable to digest scientific facts, which it scorns and misuses to its own detriment and that of the wise." "The mob scoff at philosophers and despise scientific truth." "Let not pearls then be thrown to the swine." Bacon made gunpowder and was the first to fire it, so that "it fell to the lot of a persecuted English monk to fulfil the prophesy of Prometheus, that in the latter day there should appear a wondrous being, who should call forth flashes brighter than lightning, and sounds louder than thunder."



its properties were discovered by the Greeks\* 500 years before that time. This surmise, the author tells us, was based upon the fact that the "Greek Fire," called "Wild Fire,"† and the "Sea Fire" were thought to have contained saltpeter. It is, however, conclusively shown that "Greek Fire," which was propelled by machines, or attached to the ends of darts and arrows, was a mechanical mixture of sulphur, pitch, naphtha, etc. The "Sea Fire," also, which later appeared, or "Wet Fire," so called, was a compound which would not ignite except by contact with water, upon the surface of which in its burning state it floated. This gave color to the theory, as the author tells us, that one of the "Sea Fire" constituents must have been *quicklime*. That substance combining with water raises the temperature as much as 300° F., and where naphtha is added is well adapted to set fire to vessels and other floating bodies.

Colonel Hime says that he as well as others have experienced great difficulty in determining the significance of certain names or terms, many of them most equivocal in their meaning; and that, had Horace's advice been heeded, new names would have been given to new things. *Barud*, for instance, at one time signified hail, at another saltpeter, and finally resolved itself into gunpowder. *Pulvis* was originally applied to a fine flowery dust or powdered substance, and yet to-day it has been applied to stringy nitro-cellulose, *Cordite*: smokeless powder.‡

Whatever there may have been of doubt or misgiving respecting the origin or discovery of saltpeter and of gunpowder has certainly been set at rest by Colonel Hime's determined facts and conclusive deductions. He does not go beyond the history of gunpowder in his work, or follow on subjects to be found in our numerous text-books. In some chapters consecutive pages of Latin are entered, and because, as he says, he is addressing officers of the army, translations are given, since this class of readers do not usually have access to libraries. Here we are reminded, more particularly those who have been altogether employed in scientific fields of labor, of a remark of Gen. W. B. Franklin to General Pitcher, the Superintendent of the Military Academy, at the first meeting of the Alumni Association of that institution. General Pitcher spoke of our "*Alma Mater*," and General Franklin, interrupting said, "I

\* NOTE: "We have no longer to suspect the whole body of the Greek writers on alchemy and pharmacy, from the seventh to the thirteenth century, of having entered into a vast conspiracy of silence to hide their knowledge of saltpeter from the barbarians." (Hime.)

† "The word is only heard now in the phrase 'spreads like wild fire.' But though its names have passed away, the thing remains. Greek Fire was used at the Siege of Charleston and Berthelot watched its effects when thrown into Paris by German guns." (Hime, Chap. III, p. 52.)

‡ Professor Whitney is made to say: "When the thing is perceived, the idea conceived, (men) find in the existing resources of speech the means of its expression, a name which formerly belonged to something else, in some way akin to it, a combination of words, etc. A word W, which has always been the name of a thing, M, is applied to some new thing which has been devised for the same use as M, and answers the purpose better; W thus represents both M and N until M eventually drops into disuse and W comes to mean N, and N only.

"In these days of modern powders it would indeed be well if the M's and N's, the P's and Q's, would keep their places in ranks and answer to their names as they are called."

never studied Latin at West Point, and *don't know what you are talking about.*"

The book under review shows beyond all controversy, in its several sections or chapters, that neither the Greeks, the Hindus, the Arabs, nor the Chinese have any just claim to the discovery of gunpowder. The Arab *Yasuf ibn, etc., etc.*, however, states (1311) "that the people of Irak used saltpeter to make a fire which tended to rise and move." It also increases the rapidity of ignition, but there is nothing to show that Yasuf knew anything beyond progressive combustion—nothing whatever of explosive combustion.\*

It is also known that the "Roman Candle" was used in China simultaneously with its appearance in Greece, but rather more in the nature of an incendiary material, like the "Greek Fires," than as an explosive.

The Chinese, so Colonel Hime says, were carried away always by their insatiable craving for antiquity; in all things, therefore, their claims were as unwarranted as in the matter of porcelain,† and this in itself is sufficient to disparage their records in researches of the kind before us.

Colonel Hime indulges in a passing reference to the internal and external pressure gauges invented by Captain T. J. Rodman, of the Ordnance Department, United States Army, but disposes of them in rather summary manner, and in these words: "But the thorough knowledge of the mechanical effects of the explosion of gunpowder gained by the use of the Navez (velocity) and Rodman instruments, was of little avail to anybody, for gunpowder had nearly run its course." Are we to infer from this that the lessons of the past and the principles involved in the *forms* of the gun-powders and *instruments employed*, have ceased with the advent of smokeless powders? If not, why does the Colonel say that "Just twenty-five years after

\* At times the descriptions of the early writers "abound in tropes and figures of speech which amount to an unintentional *suggestio falsi*. 'The missiles spread themselves abroad like a cloud,' says a Spanish Arab; 'they roar like thunder; they flame like a furnace; they reduce everything to ashes.' A projectile full of blazing Greek fire appeared to Joinville to be of portentous bulk. It flew through the midnight sky with thundering noise, like a fiery dragon, followed by a long trail of flame; and it illumined the camp as with the light of day."

"Even to approach the truth, we must prune such figures of rhetoric; and this is a dangerous operation, for we may prune too much." (Hime, chap. i, p. 9.)

† This exaggerated estimate of the antiquity of Chinese porcelain was for a long time supported by the discovery in Egypt of certain small bottles made of real porcelain and inscribed with Chinese characters, which were said to have been found in the tombs at Thebes, dating as early as 1800 B. C.

"The fact, however, that they are inscribed with quotations from Chinese poets of the eighth century A. D., and have characters of a comparatively modern form, shows that the whole story of their discovery is a fraud. (A lie in one thing is a lie in all.)

"Every Chinese custom, art and institution is supposed to be very ancient, and what is not really old is readily invested with fictitious antiquity.

"The world as we know it, they tell us, came into being 2,670,000 years before Confucius, who was a contemporary of the prophet Daniel. (Perhaps?) The Jesuits (through one of their number at least) beg us to put our trust in the Chinese historians, and plead that, however mendacious the lower orders of the nation, the better classes love the truth, and the historians are honest and accurate." (Hime, chap. viii, p. 125.)

the introduction of the pressure-gauge, M. Vielle put the French Government in possession of a nitro-cellulose explosive (1886)—and gunpowder was added to the things that were."

It is true that a table is given, and from the deductions, correctly drawn, it is seen that for the large-grain powder projectile velocity falls off but slightly when compared with the velocity due to the use of small-grain powder, if used in the same gun, but the maximum pressure or strain upon the gun is materially reduced for the large-grain powder.\* The general tenor of the argument of Colonel Hime is that we have our pains for nothing, now that gunpowder proper has passed off the stage.

Is it not due to Rodman, the "*facile princeps of ordnance officers*," that in any history of gunpowder it should have been stated that he was the man first to suggest that our guns should, as far as practicable, be cylindrical in form, and that the powder should under such conditions be made to burn uniformly along the bore, from projectile seat to muzzle. In fact, has it not been the end and aim of all who have had and now have to do with gunpowder and the study of explosives, to work with this end always in view? This was the lesson Rodman set for all the world from the very date of his investigations to the present hour, and this with no regard to the propellants, as to their smokelessness or smoky properties. A chemical compound, treacherous in character, or a mechanical mixture, safe in its nature, each and all had to come under the law as Rodman gave it to us, and his work is still our guide in the development of gunpowders, of whatever kind or description. Even the stringy cordite by its very form recognizes that property which shall carry forward the maximum pressure in the bore and reduce the maximum pressure to something akin to what all are striving for—a "mean pressure long sustained."

And now while we are on the subject (this time Rodman, and not gunpowder) there are other things that might be said of the late General Rodman, things which it is not unfitting for one, his pupil and assistant, to speak of the works of this great master of ordnance, a man who contributed largely to the development of all ordnance, not to speak of gunpowder, and its employment. His was not the work of discovery, as with Bacon; it was an inventive genius that distinguished the man. His hollow-cast guns set the world thinking of a *principle* of construction which, carried to its legitimate conclusion, utilized the strain as exemplified in the modern built-up gun. He laid his hand upon the old wooden carriages of our sea-coast fortifications, and uttering the word "Presto!" all was changed, and in every fortification along our extended sea-coast the metal carriage, in form and design his own, led the way to the carriage of the present day. He banished the quoin of the mortars and the elevating screws of the guns, and when asked by senior officers of ordnance "where he expected the guns to go to," he (as yet but a lieutenant of ordnance), replied: "You, colonel, instructed me at West Point that 'if a body be suspended at its center of gravity, and be acted upon by a force the resultant of, etc., etc.'" This query was answered, as were all others put to him, in sound and philosophic language.

We stand almost aghast at the bare suggestion that old things

\* The velocity is restored by the use of larger charges and still the pressure kept well down.

and old friends like these we speak of are dead and forgotten. Because of the art of photography are the Old Masters to be forgotten?

And here, by way of conclusion, yet another word: Colonel Hime refers to the effort made for some time past by enthusiasts or inventors to produce guns that will neither be seen nor heard, smokeless and noiseless powders. As long ago as 1875 (and here the writer is delving into his own ancient history), in the course of experiments a smokeless powder was discovered by Roger Bacon, No. 2. The experiments were for the purpose of determining the maximum length of barrel, the maximum weight of bullet, and the maximum powder charge for the then new Springfield .45" caliber rifle. The service length of barrel is thirty-two inches, but it was shown that ninety inches was the length which gave the greatest velocity, and with this there was no smoke. The sulphide of potassium in part condenses on the surface of the bore, and with the long barrel none of it remained to combine with the oxygen of the air, to form with it the sulphate of potassa—*white smoke*; nothing, therefore, was ejected from the long barrel but the bullet and a small quantity of almost invisible black dust; and this was black powder, our old-time, safe and trusted friend. Through the agency of a long barrel this black powder or ordinary gunpowder had become *smokeless powder*. Had the hour arrived when we should cast aside the pressure-gage and unlearn the lessons taught by Rodman?

One of the arguments in favor of smokeless powder, that troops must be screened from the view of the enemy—the argument which relates to *concealment*, but has not to do with the more important ballistic properties of the new compounds, brought about by the absence of smoke—finds its legitimate conclusion in the noiseless gun and powder yet to come. The fact that there is a material reduction of noise or report where the barrel is very long in proportion to its diameter of bore, is a step tending in the right direction. At one time it was thought that the report or noise was due to the vacuum in the barrel being filled by intruding air (as when one draws the thumb from out of a thimble), and some have provided valves to check this intrud. If, however, we consider that the pressure of the atmosphere so rushing in is but fifteen pounds to the square inch, whereas the pressure upon the base of the projectile, due to the powder charge, is from thirty-six to forty thousand pounds per square inch, it will be seen how readily the valve closers can be disposed of. This pressure, although materially lowered at the muzzle, and reduced in proportion as the length of barrel is increased, tells us that the molecular disturbance which reaches the ear has little if anything to do with the minor disturbance of *intruding* air, and everything to do with the *outflow* of gas, and possibly to the vacuum *in the air* due to the gas. The only course, therefore, that enthusiasts of the kind of whom Colonel Hime speaks should pursue will be in solving the problem of the noiseless gun to reduce the caliber to the minimum possible and practicable, and to lengthening the barrel to the maximum possible for the sharpshooter to handle. When such a weapon shall appear—and it is not at all unlikely since we mention it that it will appear—then a sharpshooter who is posted in a territory occupied by the enemy's force might so conceal himself as neither to be heard nor seen. Here we depart, and what might appear to be a digression from the review of Colonel Hime's book may yet serve some useful purpose when he gets out later editions of his valuable and interesting work,

which he will most certainly have to do in order to satisfy the American public that we produce as great men and as large-grained powders on this side of the water as any that can be found on the terrestrial sphere.

J. P. F.

### Napoleon.\*

COLONEL DODGE has made a valuable addition to his already numerous military works in the recently published "Napoleon" (Houghton, Mifflin & Co.). The writings on this great commander are so numerous that it might seem impossible to better them. However, after reading the first two volumes already prepared (the remaining two are promised shortly), it must be admitted that Colonel Dodge has filled a void by producing a comprehensive military history beginning with the wars of the French Revolution and extending through the time of the first Napoleon.

From the military view-point no work hitherto written compares with this in the thoroughness with which the military events of those epoch-making years in our profession are described and discussed. Moreover, Colonel Dodge has the eye of the soldier and the facile pen of the professional writer. As a result "Napoleon" is filled with matter of greatest interest and profit to the soldier. Each of the volumes consists of about 600 pages. Within these pages is condensed most of the valuable and interesting matter of all the numerous works upon the French Emperor. The thoroughness with which the author prepared the text is manifested by the fact that he visited most of the battle-fields described during the preparation of his books.

The maps are abundant and excellent. At first some of them seemed somewhat crude, but on use they were found very satisfactory. They are embodied with the context, which is most convenient. The folded maps should have been printed on rice or other good paper, instead of a very poor quality of flimsy material which will soon tear and make the map valueless.

The books are well divided into chapters, each with a legend in small type which is a brief synopsis of what follows. The table of contents and the index are good and convenient.

Quotations from the proclamations and sayings of Napoleon—also from the writings of others—are numerous and illuminating. Incidents, such as the crowding of Napoleon into the Arcola swamp, give a lively interest to the text. In truth, the human side of this great military genius is wonderfully well brought out.

Two of the most important chapters are the 2nd of Vol. I, on "Tactics and Administration at End of the 18th Century," and the 26th of Vol. II, on "Formation for Battle." They are concise yet comprehensive and required a high order of skill to write.

Napoleon's strategical operations are especially dwelt upon and the reasons for his wonderful successes are clearly set forth. Speaking of the Prussian campaign of 1806, the author says:

"In this campaign Napoleon again demonstrated the value and correctness of his strategic ideas. Only Jomini on the French side

\**A History of the Origin and Growth of the Art of War.* Vols. I, II. By Col. Theo. A. Dodge. New York, Boston, Houghton, Mifflin & Co. 1904.

and Bülow on the Prussian seem to have recognized, or at least to have left written pages to show that they recognized, the germ of the Emperor's success. In his 'Spirit of the New System of War,' Bülow says: 'The lines of advance are the muscles the cutting of which paralyzes the military body. As these come in only from the sides or from behind, so it follows that the flanks and the rear must be the points of operations.' But Bülow did not recognize that battle was the only means of cutting the knot. Jomini went a step further, and showed that to complete the strategic maneuver battle was essential. 'It is not enough, in order to operate well in war,' says he, 'to lead one's masses to the most important points; one must also know how to employ them there. If one stands still at these points, and remains inactive, the principle will have been forgotten, the enemy can make counter-maneuvers; and in order to take from him this means, one must, as soon as one has reached his communications, or one of his flanks, march sharply in on him and beat him.'

"To turn a flank alone merely results in uncovering one's own. It is this fact followed by a proper blow that tells. 'Action! Action!! Action!!!' is the motto."

Other quotations might be given, but this, perhaps, sufficiently illustrates how well the author brings forth the lessons on the Art of War derived from the campaigns of the Master of that Art.

Finally, it can be said that these volumes are most interesting to read as well as a source of deepest information to the military student.

PALMER C. PIERCE.

#### Administration of the American Revolutionary Army.\*

THAT much should be written about an event of such importance as the American Revolution is to be expected though much of it is of little technical interest to the military student. In the "Administration of the American Revolutionary Army," Mr. Louis Clinton Hatch, Ph.D., has prepared a valuable paper in that it shows us the crude basis of our present splendid army administrative system and presents those early administrative methods in such form that they may readily be compared with those of later periods. Mr. Hatch has reduced his facts to comparatively small space and puts the subject in excellent shape for study and supports his statements with copious foot notes citing authorities. The confusion arising from an effort to have a military force directed by a legislative body is clearly shown and the dissatisfaction causing the Congressional struggle to fix the pay and status of officers both receive considerable space. We are reminded that minor offenses were punished by flogging and rum was issued as a part of the daily ration. Disbursing officers, instead of receiving a fixed salary, were allowed a percentage on the amounts disbursed. The dishonesty of contractors who were willing to profit by robbing their defenders is noted. Notwithstanding the difference in methods from those in vogue to-day and the consequent hardships and suffering endured by the Revolutionary Army, public criticism does not seem to have been more severe than it was during the war with Spain and in the Philippines,

\*Administration of the American Revolutionary Army. By L. C. Hatch. N. Y., Longmans, Green & Co., 1904.



when soldiers were supplied with luxuries and were, at times, even fed hot meals on the firing line—the thought naturally comes to one who reads Mr. Hatch's paper that our population does not live under the personal and individual restraints which gave to the human unit of Washington's army the sturdiness and determination which enabled him to succeed, and the question arises, Would the American people of to-day stand a Valley Forge? In Appendix A of the volume are given the famous "Newburg Addresses," and Appendix B, by way of authorities cited, an excellent bibliography of Revolutionary times.

H.

### Sevastopol and Other Military Tales.\*

**I**N this work Tolstoy has put into print what he personally saw and encountered during the campaign in and around Sevastopol. His work is written regardless of what the truth plainly told might return to him; he spared no one, whether or no plain facts might hurt, and in so doing absolutely precluded any chance of promotion he may have earned.

The book he wrote from notes taken on the field of action. As he saw things he noted them, and one can readily believe from the finished work that he has not allowed time to eradicate from his memory any of the hardships and bitterness that his early notes recounted. The horrors of war are faithfully portrayed, characters are closely scrutinized and the result honestly set down; the rigid lines drawn between the officer of good birth and the one less fortunate are shown just as they existed; the ghastly bloodiness of the hospital is graphically portrayed, and the horrible conditions existing in and around the trenches detailed with minuteness. It is a work which makes one shudder, as he reads, to think that such conditions must be endured to satisfy the demands of a sovereign.

As a work of reference from a military standpoint the book has no value whatever, but as a tale of war it is one of the most readable of Tolstoy's many works. He goes straight to the point which he fully and clearly describes, he carries the reader right along with the current of his narration and when one has finished one understands fully what General Sherman meant when he said, "War is Hell."

As an entertainer the book will appeal strongly to all military men. It might also be used as a text-book in the anti-military clinic.

\**Sevastopol and Other Military Tales.* By Leo Tolstoy, C.A.D. N. Y., Funk & Wagnalls Company, 1903.

### Bibliographical Notes.

**A** *Biographical Memorial of Gen. Daniel Butterfield*, is the title of one of the handsomest specimens of the bookmaker's art and most complete and comprehensive biographies that loving hearts and literary skill have yet produced. A copy has been deposited in the Library of the Military Service Institution, of which General Butterfield was a member at the time of his death and in whose progress and aims he had taken an active interest. It is not the



purpose of this brief note to anticipate a more important review of this enduring monument to the memory of one who possessed so many of the qualities which are found alike in the successful railway manager and the able staff officer of volunteers—especially conspicuous executive ability and genius for organization. But aside from his personality, this volume treats of many important military operations, contains much historical information and a fund of anecdote and reminiscence relating to some of the great figures of the Civil War time. It is worthy of the more detailed review which we hope to publish in the near future. The book contains some excellent illustrations and is published by the Grafton Press, New York.

*The Journal of the U. S. Infantry Association\** is the latest recruit to the small but increasing army of service periodicals. It is intended to be the mouthpiece of an association whose purpose is stated to be "to promote the efficiency of the infantry arm . . . by maintaining its best standards and traditions, by fostering *esprit de corps*," etc., etc. So far the reason for the existence of the new association is clearly expressed and does not necessarily imply undue competition with or independence of other branches of the service. In the past, one of the weak points in our "officers' corps" has been a lack of cohesion in the promotion of army interests and a tendency to break up into cliques, each working to improve its own condition, regardless of the welfare of the others. One of the most important results of the development of the new staff system is ability to bring together all arms and branches in a mutual reliance and effort for the common good; anything tending to the contrary would be a step backward.

The first number of the new periodical is very attractive typographically, but like other similar publications, excepting perhaps the *Artillery Journal*, is largely composed of articles of general interest, not especially relating to a special arm. Of the eight subjects in the contents, three only pertain to Infantry: "The U. S. Magazine Rifle," "New Firing Regulations for Small Arms," and "Infantry Drill Regulations." Of the reprints, "How One Walks," an illustrated paper, is interesting and instructive for all soldiers, permanently or temporarily on foot. To recapitulate, an association of officers of a special corps may be useful; whether a periodical devoted to a special corps or arm of service is needed depends upon the supply of special "copy" available for publication. The latest venture in this direction must have the best wishes of the spectator. R.

\* *Journal of the U. S. Infantry Association*. Vol. I. No. 1. Washington, 1904.





Journal  
of the  
Military  
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1878  
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1904

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# THE JOURNAL

NOVEMBER, 1904



*SOME of the papers approved for publication  
in the JOURNAL for NOVEMBER, 1904.*

- I. "THE WAR IN THE FAR EAST"  
will furnish material for reprint  
and comment, with the aid of a  
Field Map revised, to date, for  
this Journal.
- II. "THE PANAMA CANAL."—Descriptive and remi-  
niscent papers, by Captain Herman Hall, 21st  
Infantry, and Captain Henry Leonard, U. S. M. C.,  
respectively.
- III. "PANORAMIC SKETCHING IN CAMPAIGN"—  
with illustrations by the author—Lieut. Louis McL.  
Hamilton, 14th Infantry.
- IV. "THE SCIENTIFIC COACHING OF THE RIFLEMAN"  
—a timely and valuable contribution to the literature  
of the subject—by Lieut. Townsend Whelen, 15th  
Infantry.
- V. "THE UNITED STATES vs. SPAIN"—translated from  
the Spanish for the 2d Division, General Staff, by  
Captain James Canby, Paymaster, U. S. A.
- VI. "AN ARMY SERVICE CORPS."—An original and  
suggestive paper, by A Line Officer.

*THE PUBLICATION COMMITTEE invites contributions  
of original papers, translations and comments upon current  
topics. Attention is called to "Gold Medal," "Seaman,"  
"Short Paper" and "Santiago" prizes mentioned elsewhere*

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## MEMBERSHIP AND DUES.

Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year \$2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership \$50.

**NOTE.**—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.



## Gold Medal—1904.

*First Prize*—Gold Medal, \$100 and Life Membership.

*Second Prize*—Silver Medal, Honorable Mention and \$50.

I.—The following Resolution of Council is published for the information of all concerned:

*Resolved*, That a Prize of a Gold Medal, together with \$100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and \$50 to the first honorably mentioned essay. Should either prize be awarded more than once to the same person, then for each award after the first, a *Clasp* shall be awarded in place of the medal.

1. Competition to be open to all persons eligible to membership.  
2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January 1, 1905*. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize*; and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed **ten** thousand words, or **twenty-five** pages of the size and style of the JOURNAL (exclusive of tables), nor contain less than five thousand words.

II.—The Subject selected for the Prize Essay of 1904, is  
THE EXPERIENCES OF OUR ARMY SINCE THE OUT-  
BREAK OF THE WAR WITH SPAIN: WHAT PRACTICAL  
USE HAS BEEN MADE OF THEM AND HOW MAY THEY  
BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING  
EFFICIENCY.

III.—The Board of Award for 1904, is as follows:

Major General WILLIAM A. KOBBE, U. S. Army.

Brig. General THEODORE SCHWAN, U. S. Army.

Colonel CHARLES W. LARNED, Professor, U. S. M. A.

GOVERNOR'S ISLAND, N. Y.,  
Jan. 1, 1904.

T. F. RODENBOUGH,  
Secretary.



## The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B.  
(late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES by contributing annually

### One hundred dollars in Gold

for the best Essay, subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted for 1904 is:

MILITARY HYGIENE; HOW BEST TO ENFORCE ITS STUDY  
IN OUR MILITARY AND NAVAL SCHOOLS; AND PRO-  
MOTE ITS INTELLIGENT PRACTICE IN OUR ARMY.

Competition is open to all Officers or ex-Officers of the Army, Navy, Marine Corps, Marine Hospital Service, Volunteers or National Guard.

Three copies of the Papers on the subject must be submitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1904. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as provided for the Annual (Military Service Institution) Gold Medal Prize.

The Board of Award for 1904, is as follows:

Brig. General GEORGE M. STERNBERG, U. S. Army.

Colonel WILLIAM C. GORGAS, M.D., U. S. Army.

Captain EDWARD L. MUNSON, M.D., U. S. Army.

T. F. RODENBOUGH,  
*Secretary.*

GOVERNOR'S ISLAND, N. Y.,  
Jan. 1, 1904.

## Prizes for Short Papers.

Extract from the Minutes of a Stated Meeting of the Executive Council of the Military Service Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., March 14, 1902.

\* \* \*

*Resolved:* That the regulations governing the award of Annual Prizes be and they are amended as follows:

### Hancock (Infantry) Prize.

*The Hancock Prize:* \$50, and Certificate of Award; and \$25, and Certificate of Award: to be given for the best and second best original essays or papers, the awards to be made under existing regulations for the Gold Medal, except-



ing that the papers shall contain not less than 2,500 words nor more than 12,000 words, and that but one copy of each paper shall be required from the author; said essays to be critical, descriptive, or suggestive, on subjects directly affecting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twelve months ending March 1 of each year and which have not been contributed in whole or in part to any other association, nor have appeared in print prior to their publication by the Institution, nor have been published in the JOURNAL in any previous year, and excluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a committee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry officers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of each year.

### Fry (General) Prize.



*The Fry Prize:* to be the same as the Hancock Prize and awarded upon the recommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending Sept. 1 of each year, on subjects directly affecting the military service and not otherwise provided for; with the announcement not later than November 1.

### Buford (Cavalry) Prize.



*The Buford Prize:* to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending May 1 of each year, on subjects directly affecting the Cavalry or Mounted Service; with announcement not later than July 1.

### Hunt (Artillery) Prize.



*The Hunt Prize:* to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending July 1 of each year, on subjects directly affecting the Artillery Service; with announcement not later than September 1.



## The Santiago Prize.

THE NATIONAL SOCIETY OF THE ARMY OF SANTIAGO DE CUBA has founded a prize to be known as the "Santiago Prize," by contributing, annually, the sum of

### Fifty Dollars

"for the best original article upon matters tending to increase the efficiency of the individual soldier, the squad, company, troop, or battery, published in the Journal of The Military Service Institution of the United States, during the twelve months ending December 1st in each year.

"The award to be made by the Council of the Military Service Institution upon the recommendation of a board of three suitable persons, selected by the President of the National Society of the Army of Santiago de Cuba, who shall report their recommendations on or before January 1st of the following year.

"Conditions to be the same as those prescribed for the Hancock Prize (see notice 'Short Paper Prizes'), Military Service Institution, excepting that the competition shall be limited to officers of the Regular Army or of the National Guard below the grade of major, and that papers shall not be less than 2500, nor more than 5000 words in length."

The names of the gentlemen selected for the Board of 1904 are:

General HAMILTON S. HAWKINS, U. S. A.

Major CHARLES G. STARR, Ass't Adj't Gen., U. S. A.

Major G. CREIGHTON WEBB, Insp.-Gen., U. S. V.

T. F. RODENBOUGH,

GOVERNOR'S ISLAND, N. Y.,

Secretary M. S. I.

March 1, 1904.



# Association of Military Surgeons

## Enno Sander Prize—1903=1904

The Essayist securing First Place will receive

**A GOLD MEDAL**

of the value of

**One Hundred Dollars**

The Essayist securing Second Place will receive

**A LIFE MEMBERSHIP**

IN THE ASSOCIATION,

of the value of

**Fifty Dollars.**

**Subject of the Competition for 1904:**

### THE RELATION OF THE MEDICAL DEPARTMENT TO THE HEALTH OF ARMIES.

#### CONDITIONS OF THE COMPETITION.

1. Competition is open to all persons eligible to Active or Associate Membership in the Association of Military Surgeons of the United States.
2. The prize will be awarded upon the recommendation of a Board of Award selected by the Executive Committee. The Board will determine upon the essay to which the prize shall be awarded, and will also recommend such of the other papers submitted, as it may see fit for honorable mention, the author of the first of which shall receive a life membership in the Association.
3. In fixing the precedence of the essays submitted, the Board will take into consideration—primarily—originality, comprehensiveness and the practicability and utility of the opinions advanced, and—secondarily—literary character.
4. Essays will consist of not less than ten thousand, nor more than twelve thousand words, exclusive of tables.
5. Each competitor will send three typewritten copies of his essay in a sealed envelope to the Secretary of the Association, so as to reach that officer at *least one month before the next ensuing annual meeting*, in the present case on or before September 10, 1904.
6. The essay shall contain nothing to indicate the identity of the author. Each one, however, will be authenticated by a nom de plume, a copy of which shall, at the same time as the essay, be transmitted to the Secretary in a sealed envelope together with the author's name, rank and address.
7. The envelope containing the name of the successful competitor will be publicly opened at the next succeeding annual meeting of the Association, and the prize thereupon awarded.
8. The successful essay becomes the property of the Association of Military Surgeons of the United States, and will appear in its publications.

#### BOARD OF AWARD—1904.

LIEUTENANT-COLONEL JOHN SHAW BILLINGS, U. S. Army;

BREVET BRIGADIER-GENERAL GEORGE RYERSON FOWLER, New York;

SURGEON HENRY GUSTAV BEYER, U. S. Navy.

John Cropper Wise, President.

James Evelyn Pilcher, Secretary,  
Carlisle, Pennsylvania.



## Publisher's Department.

### A SPECIAL FEATURE OF THE WORLD'S FAIR.

The Prudential Insurance Company of America has on view at the World's Fair at St. Louis an exhibit of life insurance methods and results which is in advance of anything of its kind hitherto attempted by life insurance companies. The location of the exhibit is in the Palace of Education, where the Company occupies a space of 30x50 feet. The exhibit includes a large and beautiful model of the Prudential Home Office buildings, at Newark, N. J.; a handsome stained glass reproduction of the Rock of Gibraltar, illuminated by electricity; and 178 charts, diagrams, photographs, etc., which explain on a large scale the inner workings of the life insurance business.

The charts exhibited cover the entire range of life insurance management from organization and administration to the results to policy-holders, mortality experience, medical statistics, etc.

The exhibit brings out the fact that at the beginning of 1903 there were over 17,000,000 life insurance policies in force with ordinary and industrial companies, as compared with 7,000,000 homes owned in the United States, 6,000,000 savings-bank depositors, 4,000,000 fraternal order certificates, and 1,500,000 building and loan certificates. The increase in the number of Industrial policy holders in the United States during the decade ending with 1900 is shown to have been 189 per cent., which compares with an increase of 45 per cent. in the wealth of the United States; of 43 per cent. in the number of savings-bank depositors; and 22 per cent. in the population during the same period. Other interesting diagrams illustrate the wide extent of Industrial insurance in different parts of the world, showing that there are now more than 40,000,000 Industrial policies in force in the different countries.

The charts illustrating the medical experience of the Company are of unusual interest to physicians, public health officials, etc., as well as to the general public. There are charts showing the expectation of life in different parts of the world; the comparative mortality in temperate and tropical countries; the relation of marriage to mortality; and a large number of other important elements of human mortality. Considerable space is devoted to an exhibit of the relation of occupation to mortality, with particular reference to unhealthful and dangerous trades. Physicians will be interested in a series of charts descriptive of the experience of the Prudential with rejected risks. The general practitioner will be interested in the charts exhibiting the general mortality of American cities from 1804 to 1903; the mortality from principal causes during the past thirty years; the indicated decrease in the mortality from consumption; and the apparent increase in the mortality from cancer and appendicitis.

The social economist and the expert in public and private charity administration will be interested in charts descriptive of the reduction in the pauper burial-rate in American cities since the introduction of Industrial insurance; the enormous extent to which Industrial insurance has become an element of household economics; the relative expenditures for life insurance among men in different occupations and with different incomes; and the relation of expenditures for life insurance to other items of the family budget. A number of photographs show the homes of Industrial policy-holders, and, for illustration, it is brought out that in the Riverside Model Tenements of Brooklyn over 70 per cent. of the families are insured on the Industrial plan. In some of the most desirable residential sections of the wage-earners of Newark, N. J., over 90 per cent. of all the families are insured on the Industrial plan; and in over 70 per cent. of the families, every member holds one or more policies.

## PUBLISHER'S DEPARTMENT.

### AN AMERICAN PRODUCT.

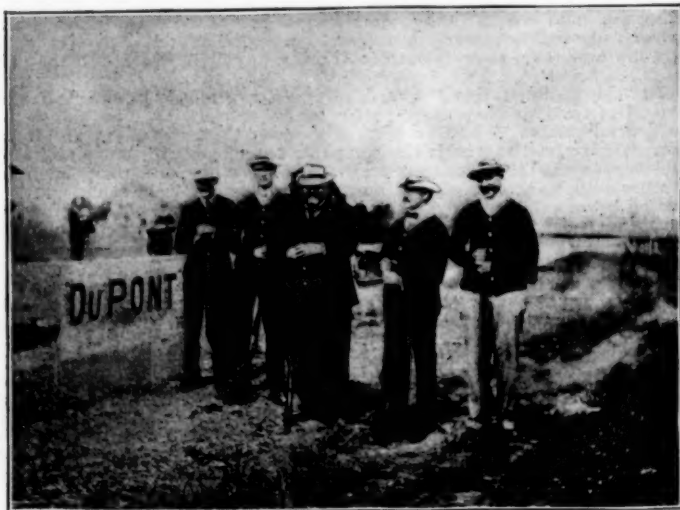
#### Scores Another Great Victory in Germany.

Prof. Dr. Lintner, Director of the "Scientific Station for the Brewing Industry of Bavaria at Munich" upon analyzing "Pilsner Urquell," the beers of the "Buergerliches Brauhaus" of Pilsen, Bohemia and "Anheuser-Busch's Budweiser," under date of May 17, 1904, makes the following statement sworn to before Dr. Pundter, Royal Notary, and verified by Hon. James H. Worman, U. S. Consul General at Munich, Bavaria:

"Upon subjecting the several beers to a careful analysis I find that the 'Budweiser Beer,' submitted by the Anheuser-Busch Brewing Ass'n, St. Louis, U. S. A., is very similar, in all its characteristics, to the finest and best Pilsener beers. It is effervescent, clear and sparkling, has a beautiful creamy foam and is possessed of a pure, wholesome taste and an exquisite hop flavor. Its keeping qualities by far exceed those of the Pilsener beers, resulting from the use of the very best materials in brewing, and the thorough maturity of the product. The analysis further shows that no acids or other preservatives have been used in its production, and as a result of my examination I pronounce 'Budweiser' a well matured bottled beer of the highest quality."

This acknowledgement, coming as it does from the recognized headquarters of the brewing industry of the old world, must be a great source of gratification and in a measure a compensation to the Anheuser-Busch people for their unceasing efforts to produce the finest beer that can be made.

\* \* \*



"The Dupont Squad which shot through the entire program of the Grand American Handicap. Reading from left to right, Victor Dupont, 3rd; Eugene DuPont; Victor Dupont Jr.; Alexis DuPont; Eugene E. DuPont."